





## ON THE FORMATION OF COAL

*Gower-street, Bedford-square, July 1.*

## THE PATENT LAWS.

The system of granting two classes of patents—the one for invention and the other for design—would also have the further advantage of enabling the true inventor to protect the many modifications in detail, almost invariably found requisite in developing an invention, provided they be discovered by himself, without incurring the ruinous expenses now necessary, and which too frequently cripple him before that standard of perfection, otherwise within his reach, has been attained.

### IMPROVEMENTS IN TIN DRESSING.

### HOW NATURE PRODUCES GOLD.

But warm dissolution is not meant heat enough to melt metals or rocks, but merely hot enough to allow "the primitive molecules of silica, &c., to be sufficiently pliant to be forced to adhere where natural causes and effects transplanted them—or say transworned, because there is every appearance of these quartzose veins, that cross the surface of different places at so many various angles and inclinations, being a subsequent production to the contingent strata through which they often pass, and which must have been in solid contact before being rent open from the bottom, to be filled (from the bottom) with the same fluid, and to be afterwards cemented together by the same plant's magmas are in the very womb of her depths, then the deeper man can go the nearer must they be to those banks of deposit that can never fail. Now, on the other hand, if the semi-molten fluid that was ejected from below to fill up the new-made openings through prior solid stratifications had ever been in any state of vitrification, the adjacent sides would have shown some signs of being charred, whereas there is not the least evidence of any burning heat having been displayed on the most delicate mineral attached. Therefore the sides of the veins, &c., have been in every liquid, and the sides must have overun the top, and the sides up and down the sides of mountains: which facts show that Nature framed her work so as to force up just enough to fill up the chasms, made to receive so much and no more.

S-SHELL of this class got so convulsively cracked, the revolving s-SHELLS had not then settled itself in its destined form and use, as without mountains there could be no valleys, and if the land and water were not some even level, circular outside, there would be little or rain - hence no springs, no rivers, no tides - and so on. It could not have been made habitable for the present constituted life, no, not even for those whose HE-ARTS are ever intent upon the realisation of but one earthly *ultimum in parvo*. However, such is the nature of man, it cannot offend them to show how their master spirit contrives to amuse the living.

In the first place, no matter what is termed the Neptunian or Plutonic theories could ever singly bring about those varied geological conformations this earth displays, as most of what are styled metals and minerals are but re-conversions from the dissolution of the four primary earths, and form primary metals. In conjunction with the four universal gases, in the way future notes will reveal. Here we merely wish to state that as far as gold is concerned, Pluto is the spiritual regulator, because his power is supreme below a certain depth, where, as the ancients asserted that "Hell is paved with gold." Hence, to please his friends above, sufficient is cast up for their daily wants, but which they must first dig for before it can be got; and when the living have done 'tillen earthly to-it above, there is room below for all those who 'till to go there. However, in the meanwhile they may learn that perfect science can imitate nature in so many modes of depositing the precious metal as to satisfy any sound thinking mind that both processes are analogous—with this difference only, that although art may disintegrate minerals, it cannot cause the same particles to cohere as at first. Only, take any quantity of gold sulphur, lime, and water, and shake them about, merely once, pour the gold leaf in a basin, covered over with fine salt and dry chloride of lime, place your sulphuric acid, and the gold will be instantly chlorided, into which insert, say, two pieces of clean porous or cracked quartz; then take out one to be thoroughly dried, and in course of time its crevices will be found to contain crystals of solid gold; whereas, if the other stone, after being taken out of the chloride of gold, is immersed in muriate of tin or iron, its crevices when dry will turn out a brown or purple oxide of gold, &c.

Next, dissolve some clear white quartz in alkali, and pure the pulp as usual. Mix some of the first made chloric liquor, and when it hardens it will exhibit nearly the same green hue as the natural chloritic quartz, so plentiful in Wales and elsewhere.

Thirdly, instead of using only the limpid liquor No. 1, mix up with the silica of course a portion of the same liquor, and gold and iron, and the last solution will dry reddish, brown and there sulphur crystallized, and will exhibit a beautiful green tinge. Now, as it cannot be denied that where any pure silica is ever intermixed with soluble silica, or what not, it must dry with it in some shape or other. Then, as such metals were incorporated by art, so can art extract them as pure as at first: consequently, where art can make a mixture, so can art produce abstract from crude stones their wholeness. Nature hath combined: at least, I am only answer for what I have myself perceived.

Now, as regards any system of spectral analysis in the detection of gold, I never could find it of any practical use, because that metal is invariably accompanied by so many hangers-on as to nullify any one regular rule; and, besides, the reflected colour of metallic gold is yellow, and the light of the bright red and its precipitations purple, blue, and green.

In fact, I find by my own experiments, that basins, and their precipitations, of the ancient glass stainers, painters, &c., had their superstructures of gold; hence the indestructibility of such rich colours, for although gold in some states is opaque, it is none when melted into the glass, as potash, &c., as it will then incorporate itself as fully as the silica in flint glass, from which it is afterwards drawn as from any other siliceous incorporation, by the simple mode often practised by—

THE WHEAL FRIENDSHIP DISTRICT, TAVISTOCK—No. I.

SIR.—It is a matter of much congratulation to the shareholders, as it must be of thankfulness to the numerous population dependent on the mine for support, that WHEAL FRIENDSHIP has again resumed paying dividends. After a career of rare prosperity—for the old Wheal Friendship was a household word in these parts, having been in the Dividend List nearly the whole of the present century, and having attained the depth of 300 fms., the mine a year or two ago was thought to be on its last legs. The recent discovery of a rich lode (Bennett's lode) has again placed this ancient mine in a highly important position, with every prospect of a brilliant future. The great discovery of copper ore on Bennett's lode has been made in the eastern part of the mine, and no great distance from the boundary of the old mine. Here, in the 78, the 100, and the 140, the lode is of considerable cross-section, and the ore has an important bearing on the merits of the adjoining sett, NEW WHEAL FRIENDSHIP, a concern about to be set at work, and whose western boundary is within 200 fms. of the engine-shaft now sinking at the point where Bennett's lode is so rich for copper ore in the old mine. In addition to Bennett's lode, New Wheal Friendship contains Kent's lode, formerly so rich in Wheal Friendship, as well as a lode recently discovered. The comparative value of this interesting sett will be apparent when it is stated that Bennett's lode and Kent's lode are of the same kind of ore as the Wheal Friendship lode, and that the latter is intersected by cross-courses, a feature in this hitherto unexplored mineral property to which too much importance can scarcely be attached, and of which more anon.

### MINING PROSPECTS IN THE CHIVERTON DISTRICT.

SIR.—In my last I spoke of the probabilities of successful results from the further and deeper development of the Chiverton Moor and North Chiverton Mines; scarcely had my letter been in type ere a new lode was cut in the former mine, only 4 fms. from surface, containing rich stones of lead ore and gossan. As a rule, the mineral which produces the gossan is generally to be found in small quantities associated with it, before it reaches the great bunches below, and is a sure guide in determining the mineral which produces such gossan; as, for instance, the gossan of the Great Consols, near the surface, was mixed with a deposit of copper, indicating that the mineral was copper ore, and the deposit of copper ore below. A similar instance may be seen at Sperris and Falmouth Mine, where, to all appearance, there is as fine a gossan as can be seen, but mixed with sulphur and arsenical muds, indicating a deposit of that mineral in depth; this has proved itself to be a muddle lode, and a similar result will be proved in the Chiverton Moor; as sure as they have stones of lead in the gossan so sure will they have a large deposit of that mineral below. Yet this mine is selling at a ridiculously low price when compared with some mines which have neither gossan or scarcely any lodes to contain it. On this subject much might be said for the benefit of the great mining country, for really legitimate mining is comparatively lost sight of, having for a time given place to some few sensation "bals" in the market; but it is hoped this

Another mine might be instanced as one likely to turn out a prize ere long—viz., West Caradon, the shares of which are selling for less than the plant on the mine, while the chances of success in the deeper parts of the mine are unequalled. The cross-cut in the 180 fm. level, which will come in under the former great deposit of copper, is a very important object, and well deserves the attention of capitalists.

The old Treasewan, after making a large deposit at the shallow levels, became poor, and on deeper development one of the greatest deposits of copper ever made in the county was met with, which returned a profit to the shareholders of over half a million sterling. The trials now being made in West Credenore are very similar, and with equal chances of success. This old Treasewan, now Treasewan and Tretharrior, is another instance of neglected mines selling at about 25,000*l.* only in the open market, and situate in the richest mining district of England.

I might draw attention to many others, but time at present will not permit. I hope at some future occasion, with your permission, to instance several mines as likely to become prizes within a short time, some of which are being neglected for the more fluctuating and consequently dangerous market mines.

CHARLES BAWDEN.

*St. Paul, Connecoll.*

## THE ROARING WATER MINE

**SIR**.—Your correspondent, William Hocking, in his remarks on this company, in last week's Journal, has undertaken to do an act of justice to the public by giving his own version of the state and prospects of this mine. It is unknown to us if he has any practical knowledge of mining, as he has given us no address, and a doubtful signature. He is certainly not a shareholder; and his remarks on the various reports from the manager are distorted and untrue. It has never been said by any of the agents of the mine that the parcel of 33 tons, sent to Swansea, was rich; it was the produce of ore ground, taken from the shafts and levels in sinking and driving as they went down. From the branches of rich ore discovered in Grady's lode a parcel has been said at 26*l*. 14*s*. 6*d*. per ton, and this not taken below 16 fathoms; whereas, at a lower depth the lode is found richer and larger, a stone having been taken from the lowest point full  $\frac{1}{2}$  cwt., which may now be seen at the office, and the ore has several rich veins, miners are now excavating it quite equal to any foreign ore they ever met.

To examine it, who pronounces it quite equal to any foreign ore they ever saw. Without going into any further matter with William Hocking, I will say, for the information of the shareholders, that we are not sinking at the present moment, on account of the water, but we are getting up a new water-wheel, and we will sink the new shaft to the depth of 200 or 250 feet, and in three or four weeks when shall resume the sinking for 200 feet lower, so as to get under the rich branches of ore at Grady's shaft. We have had the opinion of so many practical men, who have reported as to the character and prospects of this mine, and who all agree that the concern is not one of ordinary promise, that, taking into consideration that it can be worked cheaper than any other mine in the county, it having so good a water-power, with every other convenience suited for mining purposes, and the ground being so congenial for making ore, being composed of a beautiful soil, white like that which we feel at and just confirmed to be antimony, that we shall have a rich and profitable mine.

THOMAS COOPER SMITH.

18. *Fincham's place South.* —————

**YUDANAMUTANA MINING CO. OF SOUTH AUSTRALIA.**

**SIR.**—In common with other shareholders of this company, I have just received another printed circular from a brother shareholder, named Handley O'Farrell, and I must say that the motive for the continual issuing of these circulars is rather a mystery to me. I have hitherto always imagined that when a number of persons joined together in partnership, either as a limited liability company, or as a private firm, it was always the interest of every partner to "row in the same boat," and whatever might be the real merits of the business in which they were embarked, it was not usual for any one of the said partners to attempt to run down the business of the other partners, or to create any "mystery" in the company, or purposely omit referring to whether the Yudanumata Company is a prosperous one or not; that I will leave to time to determine; but, taking for granted that Mr. O'Farrell believes what he writes to be true, I then come to the "mystery," which puzzles me and other shareholders. Why, and to serve what purpose, does he issue these circulars? Why does a man holding only 10 shares, worth at the present market price about 12*g*., go to the expense of printing and posting circulars, which must cost him that sum every time he issues one? Mr. O'Farrell, in his next circular, will answer this mysterious point to the satisfaction of myself and other shareholders, then, and not before. Will I believe, any of his assertions, and that he is really acting in the "disinterested" manner he professes to be.

usually that in future they return them to him through the post, desiring to pay the postage. As it is possible that Mr. O'Farrell may imagine I am one of the persons he vulgarly denominates "Messrs. Parr and Co.," I beg to assure him that such is not the fact, being a perfect stranger to Mr. Martin, Mr. Hancock, or any of the directors or shareholders, and although only a small shareholder I am still an "Independent Assn." and not ashamed to attach my name. - July 3.

THE YUDANAMUTANA MINING COMPANY

Sir,—Mr. Handley O'Farrell, who takes such a singular interest in the affairs of the Yudanamutana Mining Company, must either be a man of the most extraordinary self-conceit, leading him to believe that whatever he writes will carry conviction to the minds of his readers in spite of the ordinary rules of evidence; or he must possess such a morbid love of the toriety that he will stop at nothing, provided his name may be brought before the public; or, lastly, his must be such a sordid soul that he will suffer anything, give him but a few dirty pounds, and trust to his unblinking efforts to amass a fortune in confidence for the same. If this measure of his character be taken, I ask any impartial person to say what he thinks of a man who could by printed circulars make the offer he did—to sell all 1000 shares at 50s. per share, deliverable 13 months 1000l. In the hands of some neutral person; and that when Mr. Martin steps forward and accepts his offer on his own terms, he backs out, and stipulating for conditions never before breathed, and so preposterous in themselves as to require the assent of anyone to grant. How is it possible for Mr. Martin, even if he will, to make the take that 40 or more of his fellow-shareholders shall not buy, sell, or in any way do, in a single share for 13 months? You, Sir, in a late impression, gave to me the words of the particular of this extraordinary transaction, and yet Mr. O'Farrell does not the unparalleled impudence, and, I may add, silliness, in a printed circular dated June 20th to say that if you had been present at the entire correspondence between Mr. Martin's editors and his own, the affair would have taken on a very different light; he, then, has unblinking publishes it himself; and I ask every shareholder if, in so doing, he has not published his own condemnation, and given proof of what I began by affirming, that he must either possess the most blinding self-conceit or the most disease love of notoriety? The transaction itself—his offer to sell cheap, and his subsequent evasion, proves an utter absence of the most common principles of truth and honesty, and is sufficient reason for me, if no other were present, to treat all his statements as untrue. If they have frequently been asserted positively to be) as most probably they are, unpaid in full, and connected for his own or his worthy hero's benefit. For my own part, I write this having said nothing more whatever in the dispute between Mr. O'Farrell and the directors of the company. I have been present at a meeting of the company, and have I ever seen or spoken to a single shareholder besides myself; but I have been the proprietor of 100 shares for more than 12 years, and I naturally read with interest the statements of the directors, and the counter-statements of Mr. O'Farrell, and in the absence of independent testimony on either side, I can only draw my conclusions from the inherent evidence in both the statements. One side or the other, I am certain, must be profoundly mendacious, but I some time since came to the conclusion, from the internal evidence, that the mendacity was not on the side of the directors, and that the other was positive proof of this; but now Mr. O'Farrell stands before me, and proclaims himself to be an honest man, and a gentleman. Not exactly that, but that they were every honest man and gentleman of the name.

P.S.—With what remarkable consistency Mr. O'Farrell declines to have the finding of 1000 shares, dreading the rise that might take place in the value of what he then recommends Mr. Martin, if he wants the mine, to buy up the 45,000 in the open market, "they are low priced enough, surely."

CROOK MONROE.

### GODOLPHIN HILL MINE

SIR,—The lode upon which the West Great Work Company have for some time past been working successfully proves equally rich in this sett. The shallow adit level, driving upon it, is turning out some very rich tin, and has during the past week considerably improved in value. The following report is by Captain James Pope, of Wheel Bassett, who has lately inspected the mine for the shareholders.

June 28.—I have carefully inspected this mine, and beg to forward you my report.—**CANTER LODGE**. In the deep adit, south-east of Parson's shaft, the lode is 8 ft. wide, producing low quality tinstone, and looking promising for improvement at this point. The ground is very dry, and the lode will be laid open, as just before this intersection I have no doubt some good tin ground will be exposed. In the shallow adit, south-west of some good bunches of tin have been passed through in the shaft, and the lode is exposed below as far as the water would admit. The shallow adit is communicated to the bottom of the shaft, which for several fathoms sinking has produced good saving work for tin, 2 ft. wide, and ground easy for working. This level will be resumed driving south-east in a few days, and will open up some good tribute ground at once. In the next 30 ft. driving, some good tin will be intersected, where I have no doubt both lodes will be exposed. I consider this level promising, and I should be pushed on as fast as possible.—**NORTH LODE**. In the shallow adit, east of Vivian's shaft, the lode is 2 ft. wide, producing saving work for tin, and opening tribute ground.—**WEST GREAT WORK LODE**. In the shallow adit east the lode is 2 feet wide, worth for tin 8 ft. per fathom; this lode has very much improved in the last 6 ft. driving, and from its appearance a further improvement may be expected daily. Looking at the ground opened on the different lodes, the quantity of tin returned, I consider this to be one of the finest places for tin-bearing ground in the district. I have no more to say, and a little ground laid open below the deep adit level, that only a small outcrop will be required to make a small mine, the water being very easy, and the ground favourable for exploring; and only a little time will be required to lay open a good and lasting mine.—**JAMES FOPE**.

## SCOTCH PIG-IRON TRADE

**Review of the six months ending June 30, 1865:—**

Dec. 31, 1864.—Total stocks in Scotland, as per the official estimate of our committee (excluding Carron).....	660,000 tons.
June 30, 1865.—In the hands of the makers, and at out-ports, as per official returns.....	231,742 tons.
In store—M. and W. Connell and Co.....	237,181 tons.
Forth and Clyde Canal Company.....	21,327 tons.
At Ardrossan.....	23,760 tons = 372,258 tons = 604,000 tons.

Decrease of stock ..... 60,000 tons.

At the close of last quarter, we had the pleasure of advising you as to the sound state and favourable prospects of the Scotch Pig Iron trade. We have now to report that, since that period, the data then adduced have been further steadily developed; and the firmest ground has been attained for the future of the Scotch branch of British industry. Having had careful returns made to us by all the makers, we have avoided going into the details of deliveries and consumption, simply comparing the authentic statement of stock, made up by our committee at the end of last year, with the figures now handed to us. This course suggested itself, as being at the time the most simple and conclusive, demonstrating, as it does, the absence of uncertainty, which

1870, monthly

There has been an increase or decrease during the past six months. The production continues to be under that of the corresponding period of 1864, thus leaving even, on an average, about two furnaces out of the total of some 18,000. The same alterations in the quantity of iron, and the substitution of more modern methods of manufacture, the ultimate result of which, however, does not lead us to anticipate any material increase, either of furnaces or in the quantities produced. The large demand for ironstone and coal already existing has the effect of deterring ironmasters from extending their works too rapidly. Our local consumption is very brisk, especially as regards the founders, who, for ordinary classes of castings, and also for pipe up to 18 inches diameter, have more orders than they can overtake for the next six months. We have likewise to notice that extensions and new works of the iron foundries are now in course of erection throughout the country. For the finer descriptions of work, such as machinery castings, the enquiry is not so active. A strike of short duration among the paddlers and millmen temporarily interfered with the consumption in our malleable ironworks, but latterly the orders received for manufactured iron have been more numerous, and the makers are now very well employed, at advancing rates. The exports are, in every quarter, to those of last year, being 3731 tons less. Considering the fact that the deficiency with which we have compared against it, was generally supposed to be the result of a demand which have been greater; doubtless, next year, the returns are pretty certain to be increased. We continue to be chartered very freely on their arrival, and there is no doubt a large balance of contracts still to be sent away. It remains to be seen whether the enhanced value of the article will prejudice future shipments. As regards the delivery by rail to England, there is nothing worthy of particular comment. The competition inland by this means are more likely to increase, should the various railways in question pursue their policy of modifying the transit charges. For the last few months, the effect noticed is not experienced any great change during the past few months, the effect noticed in our last having been partially counteracted by the advance of the price of iron, which naturally has induced the iron seller rather more freely. At the existing rate of shipping, and under our warrants, there is no immediate prospect of any new feature under this head.

Warrants and warrants, there is no immediate prospect of a rise in the six months just completed. By reference, it will be observed that the total exports of the six months just completed amounted to 1,866,000 tons, in the total stocks; and when we take into account the large production, and also the importation of English iron and hematite trash, and the large measure of congratulation that our trade continues upon such a solid basis, it is not surprising, has not sent us very heavy orders; but it can hardly be expected that a country emerging from a most injurious war of four years' duration can return immediately to a state of commercial activity, this process being of necessity gradual. In the enquiry would we, however, continue to be sent there, and any important inquiries, concluded, without producing sensibly felt on this side. Peace having been concluded, the public are now more inclined to be satisfied for the time with that country, although accounts are rather more optimistic at the present moment. Politics were a reassuring aspect, Money has fallen to its lowest point, and is likely to remain at, a low point; this, in conjunction with continued efforts to operate on a steady absorption of warrants by investors, gives considerable power to the Import duties to rise. We must not overlook the possible effects of the reduction of the Government in Germany, nor the contingency of a similar step in Austria, as foreign Governments are inclined to promote free trade. The general policy of the labour question remains unchanged, but men are by no means pleased, and consequently, still somewhat discontented, home, especially as emigration is not so usual, and consequently, still somewhat discontented. The supply is scarcely equivalent to the demand. 50,000 tons of iron are intended to contract the competition hitherto existing in Scotland. About 20,000 tons of the large parcels of Ayrshire recently put up to public auction. The iron is every appearance, and the makers have since raised their prices. As the iron is so propitious, it seems likely that speculative business will increase, and that there may be on the eve of fluctuations. The iron trade of the country is unquestionably healthy.

STEWART AND BROTHERS, Metall. Indus.

“WONDERFUL TOAD.”—The geological world will be

**DEATH OF THE "WONDERFUL TOAD."**—The geological society were sorry to hear that the remarkable toad which was found embedded in a block of Newnesian limestone at Hartlepool, computed to be 6000 years old, expired yesterday morning. The antiquated reptile was found in April last, and has been in the aquarium of the Hartlepool Museum, and while there attracted thousands of visitors. Its death is attributed to injuries which are supposed to have been inflicted by some visitors to the Museum, who were excursionists from Newcastle.—*Newcastle Daily Chronicle*.











mine below. It was our intention to have fixed the pole in the 35 at once; but, owing to the foul air in this level, we are compelled to clear the 12 and 34 before we can proceed further. However, I hope by Saturday next the whole will be accomplished, and the mine fairly ventilated. Our consumption of coals last month throughout the mine was 13 cwts. per 24 hours.

OWAN CONSOLS.—Joe Viscusi, John K. Brown, and...











On the Stock Exchange a very limited amount of business has been transacted in Mining Shares during the week. The following quotations were officially recorded in British Mining Shares:—East Carson, 12½; Great Laxey, 20; Great Wheal Vor, 31s, 31½; West Chester, 7½; Great Wheal Vor, 31s, 31½; East Carn Breva, 6s; East Basset, 16.—In Colonial and Foreign Mining Shares the prices were:—Cape, 11s, 11½, 11½; St. John del Rey,



PARTICULARS OF COPPER ORES SOLD IN CORNWALL IN THE QUARTER  
ENDING JUNE 30, 1885.  
Copper ores, 40,562 tons (21 cwt.).—Fine copper, 2480 tons 1 cwt.—Amount of  
money, 190,868l. 8s. 6d.—Average produce, 6½%.—Average standard, 121l. 14s.—Average  
price (per 21 cwt.), 47. 14s.











temporarily check this development, but the preparatory works required for increasing the extraction will not be pushed forward less actively. With this object the management commenced last year a pit intended to work below the level of the valley intermediate beds, containing considerable quantities of coal; this work will soon be completed. It has also been considered desirable to establish a second machine for the fabrication of agglomerates, and a new washing machine; these apparatus, the erection of which has been delayed by a rigorous winter, are now completed, and will enable the managers of the mines to furnish all the qualities and varieties of combustibles required by industry. The coal of several of the beds has been recognized as suitable for the fabrication of gas; it is now supplied to gasworks at Madrid, and has contributed materially to reduce the price of gas in the Spanish capital. Proposals for the reduction of customs' tariffs, with reference to coal and coke, cannot seriously affect the outlets of the mines, as the margin of price between their coal and that derived from England will be always sufficiently considerable to render the difference between the selling price and the cost price remunerative. Indeed, the directors consider that all liberal customs' reforms, including those which refer to coal, cannot fail to be favourable to their enterprise, in consequence of the impulse which will be given to industrial operations of every kind, and which must cause an increase in the consumption of coal. The management is now pursuing at its second coal basin at Valderosa the execution of two pits, which will enable the number and importance of the coal beds in this locality to be fully appreciated.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

JULY 6.—The confirmation of last quarter's prices was generally looked forward to in this district as the result of the Staffordshire Quarterly Meeting, and the prediction proved correct. Welsh iron continues in good demand, and the market is, upon the whole, in a decidedly healthy state. The advices from America are still discouraging, yet, despite all this, several local firms have commenced shipping an increased quantity of iron to New York. Various opinions are entertained as to the future of the trade with the States, but it is generally agreed that in two or three months' time, if not before, there will be an increased demand from the markets of that country. The Zollverein treaty has not yet done much for South Wales; however, it is rather soon yet to judge of its effect. Tin-plates firm. The export enquiry for steam coal is showing signs of returning activity, and home consumers are purchasing considerably. House coals command a moderate coasting sale, while the home trade is dull.

Unpleasant rumours are being circulated respecting the Pen-y-darren Works, and there are apprehensions that some difficulty has arisen which may be the means of putting an end to the sale to Mr. Fothergill. It is said that Mr. Fothergill purchased the property under certain reservations, the supply of coal and the construction of a railway from Plymouth to Pen-y-darren being two of the contingent points. As is usual where a capitalist or public company has to deal with six or seven different parties, unexpected difficulties often present themselves, and one or two, or, perhaps, more, fancy that they can dictate almost any terms they may think proper, and obtain for their property three or four times its real value. This, it appears, is the stumbling block which has been met by Mr. Fothergill, and which has caused the unpleasant rumours referred to. A few weeks will, no doubt, determine the result, and it is to be hoped, for the sake of the immense working population of the neighbourhood, that Pen-y-darren will once more become the source of employment for a large number of hands.

The Dowlais Iron Company have just completed the new steel works which they have erected at a considerable outlay of capital, in order to carry out the manufacture of steel under the Bessemer process. The steel bars and other descriptions already produced have stood the several tests, and the new forge, under the able management of Mr. Menelaus, is evidently destined to become an important branch of the gigantic concern at Dowlais. The trials that have been made by the London and North-Western Company as to the relative durability and cost of steel and iron rails having proved so decidedly favourable to the former, it is believed that in a few years steel rails will be generally adopted; and, if such should be the case, there is no doubt that steel forges will be added to the principal works of this district. The late railway accidents will also assist in bringing about this change, for steel rails being so durable will not require to be removed for 40 or 50 years.

The following bills affecting this district have already passed both Houses of Parliament:—Alexandra (Newport) Docks Bill; Pontypool, Caerleon, and Newport Railway, Newport and Usk Railway, Great Western and South Wales Direct Railway, and the Bute Docks Bill. All these undertakings are of the greatest importance to the iron and coal interests of South Wales, and it is evident, from the determination to secure increased dock and railway facilities, that there is a promising future in store for the district.

Mr. E. Thomas, late forge and mill manager at the Abersychan Iron-works, was presented, as a testimonial of respect on his leaving the neighbourhood, with a valuable gold watch and guard; also, a valuable keeper-ring for Mrs. Thomas, and two Albert gold chains, for Mr. David Thomas, agent, and Mr. Edmund Thomas, roller, sons of Mr. Thomas. The articles were supplied by Mr. George Walters, silversmith, &c., Pontypool, at a cost of upwards of 36*l*.

The arrivals at Swansea include—the Pathfinder, from Guayacan, with 470 tons of copper in pigs, for H. Bath and Sons; the Margaret from Adra, with 110 tons of zinc ore, for H. Bath and Sons; the Resonance, from St. Malo, with 150 tons of zinc ore, for Dillwyn and Co.; the Emily Corlett, from St. Malo, with 108 tons of iron ore, for Homfray and Co.; and, from Cherbourg, with 140 tons iron ore, for W. Crawshaw.

#### THE DREADFUL COLLIERY EXPLOSION AT TREDEGAR.

The adjourned inquest on the bodies of the 26 men killed by this explosion was resumed on Thursday, before Dr. W. H. Brewer, coroner for the district. Mr. Charles James appeared for Mr. Bevan, the manager, and Mr. Justice represented the company. Mr. Lionel Brough, Government Inspector of Mines for the district, was also present. John Jehu said he was the fireman of the colliery, and it was his duty to inspect the workings every morning previous to the men going in. There was another fireman; where the explosion took place was in his district. He went down the morning as usual, and found no gas. David Jones had a lamp. On Wednesday previous to the explosion Jones wanted to remove the door which turned the air to his heading, but witness gave him instructions not to. Jones, however, took the door down, contrary to his orders, and it remained down from Wednesday to Friday, when the explosion occurred. A large quantity of gas collected through this door being down. He reported the matter to the overman. The overman and him had a consultation, and they were of opinion that it would be safe to let Jones work until Saturday. There was a danger mark put up outside, where this accumulation of gas was, and no fire could take place unless some one went willfully through the cross timbers. Jones took a lamp of his own accord that morning. It was witness's duty to report to the overman, and this he did. He was down when the explosion occurred, making his way to the back workings. The witness described what he saw after the gas fired. It would take only a few hours to put up a door. There was a carpenter employed to make doors, and it was as much witness's fault as anyone else if a door was not put up when required. Reynolds, the overman, was a young man; they were on good terms. The men sometimes had lamps; they were not locked. He did not hear of any gas firing on Thursday. The gas was 8 or 10 yards from where David Jones was working.

By Mr. BROUGH: The timber in the heading after the explosion was there before, and formed part of the cross timber, and the overman thought that it would be safe to let matters remain until Saturday before putting the door up.

By Mr. JAMES: They commenced putting the timber up immediately after Jones took the door down. He examined the heading on Thursday and Friday, and found the gas did not increase. He was certain that the gas could not be fired unless someone went beyond the cross marks. The reason they delayed putting up the door was that it would be dangerous to carry the gas off in the ordinary course of the air while the men were working.

By Mr. BROUGH: Then you ought to have taken all the men out.

THOMAS ARTHUR, a lad aged 16, said he worked in deceased Jones's heading on the day previous to the explosion. The gas fired that day, and the side of his face and neck were slightly burnt. The gas accumulated in consequence of Mr. Jones's men leaving the door open. Neither he or his father were down the morning of the explosion, as his father did not feel very well. They were not afraid of gas.

RICHARD WINSTONE said on Wednesday previous to the explosion he met a collier named Richard Jenkins, who said he was not able to work in consequence of the door having been taken off by David Jones, and the gas had, in consequence, accumulated. Mr. Bevan happened to be near at the time, and by witness's advice Jenkins rather unwillingly told Mr. Bevan about it. The latter said it was quite wrong to remove the door, and told Jenkins to go to the fireman and convey him a message to put up another door or a brattice at once. Mr. Bevan always placed the most experienced hands to work in that part of the colliery where the explosion occurred, as there was some amount of danger there. Mr. Bevan was always exceedingly strict as to having his orders carried out.

JOHN REYNOLDS said he was the overman. He corroborated Jehu's evidence as to the door being taken down by David Jones. He remonstrated with Jones for taking down this door, and they at once put up cross timbers to prevent anyone going to the top of the heading. He believed that David Jones's boy fired the gas in the cross-hole. The boy had no business there. His body was found opposite the cross-hole, about 50 yards from his father. He told Mr. Bevan on Thursday about the gas in the heading, and suggested that it would not be safe to take it out until Saturday, unless all the men were stopped. Mr. Bevan acquiesced, and directed them to clear the gas as soon as possible. The lamps were not locked.

By Mr. BROUGH: The 3d Special Rule says all lamps are to be locked.

Mr. JAMES: But this is not a locked-lamp colliery.

By Mr. BROUGH: That does not matter. The rule is imperative where lamps are used.

The WITNESS: The lamps were locked when used for workings.

By Mr. BROUGH: If another door were put up at once, the gas would get all the men out.

Mr. BROUGH: Then, in the name of humanity, why did you not get all the men out?

—WITNESS: That was the mistake, I suppose.

By Mr. JAMES: Only one death had occurred in the colliery since it was opened, sixteen years ago.

BENJAMIN REES said he was the lampman. He gave out lamps to the men when they were turning stalls. He gave Jones a lamp on the Tuesday. It was the custom not to lock the lamps when they were simply used for trying gas. Where they were used for working, one man was given a key, and was held responsible for all those working with him. The inquest was then further adjourned for a week.

#### SOUTH WALES INSTITUTE OF ENGINEERS.

The next general meeting of the members of this institute will be held in the Town-hall, Cardiff, on Wednesday next, when the following papers, read at the last meeting, will be discussed—Mr. T. Forster Brown, "On the Caerphilly Mineral District;" Mr. E. Hedley, "On the Tugging of Shafts." The following papers will be read and discussed—

On a new Mining and Land Surveying Theodolite, by Mr. H. D. Hoskold, M.E.; "On an Equilibrium Slide-valve for Steam-engines," by Mr. Howe. The following gentlemen are on the ballot list to be elected Members of the Institute—Mr. W. Thomas, Gwman Colliery, Aberdare, proposed by Mr. H. J. Evans, seconded by Mr. Martin; Mr. J. J. Bodmer, Newport, proposed by Mr. Menelaus, seconded by Mr. Walter; Mr. R. Bodmer, Newport, proposed by Mr. Menelaus, seconded by Mr. Haslam; Mr. Benjamin Jones, agent, Rhymney, proposed by Mr. Bodington, seconded by Mr. Martin; Mr. W. R. Williams, F.G.S., mining engineer, proposed by Mr. H. D. Hoskold, M.E., seconded by Mr. Cox; Mr. Lewis Thomas Mardy, Aberdare, proposed by Mr. Martin, seconded by Mr. L. Brough; Mr. W. H. Williams, colliery proprietor, Cardiff and Bristol, proposed by Mr. Bassett, seconded by Mr. Brough.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

JULY 6.—The Tyne presented a very busy appearance last week, a large fleet of vessels having arrived consequent on the change of wind, which had been adverse some time previously. The collieries are, generally speaking, well supplied with orders, and the same may be said of the various ironworks and manufacturing in the district. The traffic on all the northern rivers is rapidly increasing, but this is the case especially as respects the Tyne, for not only the general trade and commerce on this river increase rapidly, but its banks are filling with chemical works, iron shipbuilding yards, &c. The extensive chemical works at Hebburn, built for the Messrs. Tennant, of Glasgow, are now nearly completed, and operations will be commenced forthwith. The demand for workmen's houses on the Tyne is very great, and has been largely increased lately by the operations and requirements of the Tyne Coal Company. This company having given notice that they will require shortly all the houses at the Hebburn and Wallsend collieries—indeed, they have already taken some of them, the workmen employed in sinking and other operations occupying them. The dispute at the Cramlington Colliery remains in the same position as last reported, no understanding having been come to between the parties; this is much to be regretted, as a large number of men and boys are thus thrown out of employment.

At the Northumberland Miners' Mutual Confident Association committee meeting, at Seton Delaval, on Saturday, it was resolved—"That men working at collieries not in the Union be allowed to join with any other colliery which may be in the Union." "That the Steam Collieries' Association be requested to allow us, as an association, to appoint two men to accompany the viewers appointed by them to examine the workings of collieries where differences exist relative to price, some of the workmen being allowed to accompany the said individuals, for the purpose of giving all necessary explanations." Other matters pertaining to the general business of the association were then disposed of, after which the meeting broke up.

NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.—Upon the invitation of the South Lancashire and Cheshire Coal Association, the annual meeting of this institute will this year be held in Manchester, the proceedings commencing on Monday. Every effort has been made to render the visit to Manchester interesting and instructive, and the arrangements made are of the most complete kind. It is intended at the conclusion of the ordinary business of the meeting on Tuesday to make an excursion to the cotton mills of Sir E. Armitage, and also to afford the members an opportunity of examining the extensive works of the Geological and Natural History Societies at Clifton Hall Collieries, dinner being provided at the latter colliery by Messrs. Andrews, Knowles and Sons. On Wednesday, the London and North-Western Company will provide a special train gratuitously from the London-road station, Manchester, to Crewe, thence to Kirkstall, Wigan, and back to Manchester, to enable the North-Western Company's locomotive and engineering works, and the Bessemer steel works at Crewe, and the Kirkstall Colliery and iron furnaces, and Lord Crawford's new canal pits at Wigan, to be visited. At Kirkstall, dinner will be provided by the Kirkstall Hall Coal and Iron Company. On Thursday, the Lancashire and Yorkshire Railway Company will provide a special train gratuitously from the Victoria station, Manchester, to enable Messrs. Platt's machine works at Oldham to be visited, and dinner will be provided at the Clarence Hotel by the South Lancashire and Cheshire Coal Association. On Friday, it is proposed to visit various manufacturing works in the neighbourhood, including those of the Broughton Copper Company, at Broughton; Messrs. Eveleigh's hat works, at Salford; Messrs. Edmundson's railway ticket works, at Strangeways; Messrs. R. Johnson and Co.'s wire works, at Bradford; Messrs. Hoyle's Mayfield print works, Bank Top; Messrs. Whitworth and Co.'s engineering and gun works, Chorlton-street; Messrs. Ryland's and Sons warehouse, High-street; and Mr. Wm. Horsfall's card making machinery, Great Bridgewater-street. The visit will likewise afford an opportunity of visiting the museum of the Geological and Natural History Societies of Manchester, the salt mines and works at Northwich; the Alderley Edge copper works at Cheshire, and many other large industrial works of general interest. We shall publish a full report of the entire proceedings in next week's Journal.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

JULY 6.—The elections are so entirely absorbing all interest that very little is said about trade. The Iron Trade is, however, quiet, and so are the Hardware Trades, but this the elections and the season—the eve of a quarter—help to account for. A week or two will show how the trade will be likely to be for the next quarter. Mr. T. Bantock, of the firm of Bantock and Co., of Wolverhampton, has joined the board of directors of the Parkfield Iron Company. Mr. Bantock's experience in the district will give good assurance of the prospects of the undertaking. It is stated that the shares are now at 2 to 2½ premium. Mr. Henry Sparrow, of Corby's Hall, has failed. At the meeting at Birmingham to-day, the statement prepared by Mr. W. L. Harrison showed liabilities amounting to 27,600*l*., the estimated assets a little under 13,000*l*. A discussion ensued which lasted nearly two hours. The intention has been to make a proposition to pay 7*s*. 6*d*. in 1*l*., secured by instalments at six, twelve, and eighteen months, but the guarantees named would not come forward unless they could obtain a renewal of the lease of Mr. Sparrow's Corby Hall Works, which expires in 1867. There being an uncertainty as to this, an assignment was agreed to, the trustees being Mr. H. O. Firmstone, Mr. Neale Solley (of Fletcher, Solley, and Urwick), and Mr. W. H. Beaumont. The failure has been looked upon as likely for some time, and as impending for some weeks past.

Mr. C. H. Taylor, of Spencer-street, Birmingham, has patented an apparatus for preventing accidents in mine shafts and hotel lifts. Two notched uprights are first of all to be fixed in the sides of the shaft; the new apparatus is then fixed above the descending cage or lift. If the rope or chain breaks, the chamber fixes itself in the notched beams in an instant. Two wheels rotate in the notches, and between them is a slide or brake, with notches corresponding with those on the wheels. To the upper part of this brake the rope is attached, and to the lower part of the brake is a spring; should the rope become fractured, the brake is drawn downwards by the spring, and locks the wheels in the uprights. If successful, this invention would be applicable to lifts in hotels, shops, offices, &c., for which such an invention, of a simple and practicable character, is much needed. The waste of bodily strength in climbing stairs, and carrying burdens up and down them, is very great in large towns.

A circular has been issued by Messrs. Nettlefold and Chamberlain, screw manufacturers, of Birmingham, announcing that they have secured the transfer to themselves of the works, "freholds, machinery, stock, patents, and goodwill of the late firm of Messrs. James, Son, and Avery, of King's Norton and Bradford-street." Also, that they have arranged "with Mr. John Hawkins (late Messrs. Fox and Hawkins), for the acquisition of all the machinery, stock, patents, and goodwill of his old-established business, heretofore carried on in Prince-street." A hope is expressed that "by these arrangements, we shall have avoided the necessity of further sacrifices in a trade which has already suffered severely from excessive competition."

#### REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

JULY 6.—The ironmasters having decided not to alter the current rates for iron, there has been a slight improvement in the trade, and many orders which were held in abeyance have now been given out. In manufacturing iron there is an improved demand, and it is generally believed that the trade will progress and improve. The termination of the American war has caused a stoppage to shipbuilding, and, now that the blockade has been raised, many vessels are offered for sale, so that there is quite a dulness pervading the iron shipbuilding trade. The enquiry for bars and railway iron is active, but in other departments the trade is of a duller character. In the Middlesex district the pig-iron trade is firm, and rates are fully maintained.

Peaceful legislation and mediation have been made to prevail in the case of the opposition between the Great Eastern and the Great Northern Railways, the effect of which will be that the southern markets will not get the supply of coal at the cheap rate which was originally intended. An important arrangement has just been completed between the Midland and the Great Northern Railway Companies as to the through rates, which will be a great boon to the coal merchants trading in South Yorkshire. It has been usual for the Midland to charge from Mansfield to the stations to which the coal was consigned, the South Yorkshire charging for the carriage upon their own line. The Great Northern have adopted a similar plan, but the arrangement for through rates has been agreed upon by the Great Northern, Midland, and South Yorkshire Companies.

There has been a slight improvement in the Coal Trade for manufacturing purposes, but the demand for household consumption is, owing to the heat of the weather, very dull indeed. Silstone coals are much enquired after, both for home consumption and for exportation. Derbyshire brands also find a ready market, the demand being about equal to the production.

The principal joint-stock companies in South Yorkshire remain much in the same state as last reported. It is wonderful to see the great number of new projects which are started, and it is to be hoped that some will not have to go to the wall. The valuation of the Sheepbridge Coal and Iron Company has recently been completed, and we shall soon learn the nature of the

undertaking. In Yorkshire during the past week several attempts have been made to launch new concerns; but there is more of an apathetic feeling evident respecting them than formerly. The elections, too, are absorbing so much attention, and most of the members being more than usually active in these counties.

#### TIN,—HOW SAMPLED, ASSAYED, AND SMELTED.—No. III.

On the subject of the impurities in commercial tin, and the effects produced thereby, a great deal may be said; but, unfortunately, we have as yet but little definite knowledge of the subject. This is the more to be regretted, as there are certain facts, which we already know, of peculiar interest, which indicate a promising and profitable field of enquiry to the metallurgical student who follows them further. For example, the commercial value, or, rather, the malleability and ductility of metallic tin, does not diminish directly with the increase of those metallic bodies, such as copper, with which it is most commonly admixed in Nature. Again, there are certain compounds in the tin ores of some districts which completely destroy the value of the metal derived therefrom; but we are, unfortunately, ignorant of the character of these objectionable bodies, and are consequently unable to devise the right means of separating them from the ores before smelting. One fact with respect to a metallic alloy of tin and iron may be worth mentioning. When a bar of tin and iron in which the tin predominates is heated, pure tin will first flow from it, then an alloy of tin and iron, and then the feruginous character of the flowing metal will continue to increase until the metal will no longer flow, but will present a pasty appearance, and which will be a definite compound, consisting of one part of tin and four parts of iron.

Historically, tin is one of the most interesting metals; for, although the time of its first application to the arts and manufactures is uncertain to us, yet we may grant to it a great antiquity, as all the most ancient metals we have found are alloys of it with copper. When pure, tin is the whitest of metals next to silver. It is very malleable and ductile, and may be bent backwards and forwards without breaking. The cracking sound produced in bending it is the grating of the surfaces of the crystals of which the metallic bar is formed against one another. Tin melts at 442° Fahr., and to retain its whiteness must be cast at the lowest temperature possible. Metallic tin undergoes little or no change on exposure to dry or moist air, but it becomes, when heated, readily converted into oxide. It may be easily dissolved in hydrochloric or sulphuric acid, forming, with the latter, sulphate of stannic oxide.

The metallurgy of tin consists in the reduction of the oxide of tin (the only ore of the metal of any commercial importance) by means of carbon. In tin smelting the ores should be carefully sorted, according to their purity; and this is a point of no small importance, for, curiously enough, it is often found in practice that when the ores of different districts are smelted together the resulting metal is inferior to that of either district taken alone. On this question of the purity of different ores, one fact may be safely stated—that English stream tin is the purest found in Nature; for, however, it must be remembered, is true of only English stream tin, for in those tin countries where iron largely predominates stream tin is, as a rule, more impure than vein tin. These general assertions are of little value to the tin miner; it will, therefore, be better to pass on to the subject of tin smelting. In England the furnace for this purpose is termed reverberatory. The bed of the furnace, as usually constructed, is comparatively shallow. It is made concave, and slopes gradually from the fire-bridge, as also from all sides, towards the tap-hole, which is on one side. The fireplace occupies one end of the furnace, and the chimney, or stack, is built at the opposite end, but a little on one side. The usual plan is to provide each furnace with a separate stack, but this is not at all necessary, for there are tin smelting houses where there is one large stack for a number of furnaces, and certainly this common outlet seems to answer admirably. Of course, where this latter arrangement is adopted each furnace is supplied with dampers, by which the smelter can regulate the draught to a nicety. In front of the tap-hole is a large kettle, or iron pot, into which the melted tin is allowed to flow from the furnace. This pot is built into brickwork, and joined to the side of the furnace, and has underneath it a fireplace. The furnace itself is built of fire-brick; and, as the heat required is very great, the whole structure is strongly bound with iron girders and stays. At the end, exactly opposite the fireplace, and by the side of the stack, is an opening closed by a door, through which the smelter removes the slag, and rables the charge. On the side opposite the tap-hole is another door, through which the charge is introduced. The depth of the fireplace from the bars to the top of the bridge is about 15 in. The fire-bridge is hollow, and defended by a bridge-plate. The fire is kept above the top of the bridge, and its quantity is so regulated as to get the greatest quantity of heat from the smallest possible amount of fuel. The depth of the lowest part of the bed of the furnace is not more than 6 in. The bed itself is constructed in the following manner:—A series of iron bars are placed across the furnace, and on these are placed a bed of slate, firmly joined together by lime. On this bed is placed a layer of clay, and on the clay a bed of bricks, standing on their ends. This forms a capital furnace bed, and is now commonly adopted, especially in the furnaces used for nickel smelting. The great advantage of this form of bed is that it can be easily replaced at a moderate expense, a desideratum of no small value in cases as those mentioned, where the furnace-bed requires to be renewed often, perhaps every three months. The usual charge for an ordinary-sized reverberatory tin smelting furnace consists of 25 cwt. of ore and 5 cwt. of culm, or powdered anthracite.

Previous to their introduction into the furnace, the ore and flux are thoroughly mixed together. The mixed charge is thrown in through the side door, and distributed evenly over the bed by means of a rable, or through the end door. Directly this is done the doors and tap-hole are carefully luted over with wet clay, and the fire being kept bright and clear, the charge remains untouched for about four hours; at the end of this time the smelter introduces a rake through the end door, and thoroughly rables the charge. Letting it, then, rest for an hour, he repeats the rabling, and opening the side door after a short time, he throws in over the molten mass a thin layer of culm, luting up the door immediately afterwards, and at the end of the sixth hour the charge should be ready to tap. Being satisfied that the time has come for this, the smelter breaks away the clay from the tap-hole, and the molten metal runs into the iron kettle. After the metal has continued to flow for some time, and directly it ceases to flow rapidly, the smelter rakes through the end door the slag which remains in the furnace, which consists of anthracite, slag, and metallic tin. In the iron kettle with the metal will be found a slag, which will remain at the surface, and which, directly it solidifies, should be removed. The metal underneath is ladled into moulds. All the slags are placed on one side, to be submitted to an after process, to extract the tin contained in them. The fuel used for the smelting above described consists of a mixture of binding and free burning coals, and the quantity required to reduce one charge is about 15 cwt. Now, the metal obtained in this first smelting is very impure; and whether it be required to produce good common tin, or refined, the metal has to be submitted to a subsequent process, which it will be well to detail at once.

The blocks of tin obtained in the first smelting are placed in a furnace similar to that already described, and arranged near the fire-bridge. The heat being then raised, the tin rapidly melts, and runs into the kettle, lying behind it, on the furnace-bed, a compound termed hard head slag, consisting of arsenic, iron, and tin. This slag is removed from the furnace once, and although containing often a considerable quantity of tin, it is, from its extreme infusibility, and its highly ferruginous character, thrown away. Pieces, however, of it, which contain a visible quantity of tin, are treated with the other slags. Well, the tin which has run into the kettle, and which is there kept melted by a fire kindled in the grate beneath, is still impure, containing iron and other oxidisable metals. To separate these, pieces of apple-wood are fixed in a frame, and depressed into the molten metal. The immediate effect of their immersion is the rapid ebullition of gaseous matter, which, finding its way through the metal, keeps it in a continual boil. By this means the oxidising influence is in turn brought to the surface, and becomes soon apparent by the skin of the atmosphere, the effect of which becomes soon apparent by the skin of the metal on the surface of a scum, which has to be skimmed off from time to time. This boiling process is kept up for seven or eight hours before lading commences. The process is termed tin refining. Smelters, instead of using green wood to effect the oxidation of the metal, produce the same result by tossing the metal, or rather by lifting it, to a considerable height into the air, and then letting it fall again, and this seems practically as good as the other; in each, the resulting metal should be merchantable tin.

In this sketch, or rather outline, of those processes through which tin passes in its passage from the mine to its form of block tin, as known to the merchant, it has been impossible to enter into such details as



**M. R. D. COHEN—NOTICE OF REMOVAL TO 2, CHURCH COURT, CLEMENT'S LANE, LOMBARD STREET, E.C.—The SHAREHOLDERS in the FOLLOWING MINING COMPANIES will have the goodness to NOTICE the ABOVE ADDRESS:—**  
**SORTBRIDGE CONSOLS MINING COMPANY.**  
**PENDEEN CONSOLS MINING COMPANY.**  
**GREAT WHEAL ALFRED MINING COMPANY.**

**G**REAT WHEAL ALFRED MINE.—ALL PERSONS having any CLAIMS against the above mine are REQUESTED to FORWARD PARTICULARS of the same, on or before the 12th day of July next, to the undersigned, in order that they may be examined by the Committee, and, if found correct, discharged, prior to the final liquidation of the affairs of the mine.

By order of the Committee, DAVID COHEN, Sec.  
2, Church-court, Clement's-lane, Lombard-street, E.C., June 27, 1895.

**THE TALARGOCH MINING COMPANY (LIMITED),**  
 DYSEARTH, near RHYL.—The Directors of this Company are OPEN to CON-  
 TRACT for a TWELVE MONTHS' SUPPLY of COAL for the Mine, commencing from  
 the 1st of August next, to be delivered in trucks by rail at the rate of 150 tons per week.  
 Tenders, addressed to the Directors at the mine, to be sent in by the 19th of July  
 next, stating price per ton, at the pit, and railway charge from colliery to Prestatyn  
 Station.—Talargoch, near Rhyll, June 26, 1885. **WILLIAM SMITH, Sec.**

**NORWEGIAN COPPER COMPANY (LIMITED).—TO BE**  
SOLD, a FEW SHARES (with £3 fully paid-up) in the above company, at  
£1 per share.—Apply (by letter only) to "R. F.," care of Mr. Vickers, 2, Cowper's-  
court, Cornhill.

**PUBLIC WORKS CREDIT COMPANY (LIMITED).**  
Ten per cent. dividend, and bonus of £1 per share, declared June 29. SIXTY-FIVE SHARES TO BE SOLD at a sacrifice, owing to death.—Apply to Mr. Newcomb 6, Sutherland-street, Fimlico, S.W.

**M**INING OFFICES.—ANY PARTY WISHING to ACQUIRE the ABOVE, wholly, or at first in part, which is well established, with a good connection, and in a first-rate situation in the City, can apply at first to "Sliex," MINING JOURNAL office.—July 7.

**COMMISSION AGENCY.**—A GENTLEMAN, residing in the heart of the West Cornwall mining district is WILLING to UNDERTAKE the SALE of POWDER or any OTHER MATERIALS USED in MINING, on commission. The highest references will be given. Advertiser has a large mining connection. Apply, "H. W.," MINING JOURNAL office, 26, Fleet-street.

**TO CAPITALISTS.—WANTED, a PARTNER** in ONE of the MOST PROMISING COLLIERIES in NORTH WALES. The royalty is about 500 acres, and is already proved to contain four valuable seams of coals, adapted both for house and steam purposes, and the returns on the capital invested will be at least 50 per cent. annually. The capital is required for the full development of the concern, and if preferred the incoming partner may have the entire management, financially and otherwise.—Address, "W. 15," Post-office, Liverpool.

**WANTED**, by the advertiser, a **SITUATION** as **ASSAYER** of **COPPER, TIN, LEAD, or SILVER ORE**. Accustomed to practical mining in all its branches, or mining accounts. Would prefer going abroad. Parties would save time and trouble by stating salary given, &c. References on application, as usual.—Address, "J. W.," **MINING JOURNAL** office, 26, Fleet-street, London, E.C.

**WANTED.**—By a person who has had several years' experience as MINING CAPTAIN, both at home and abroad, a SITUATION in a similar capacity. He is thoroughly acquainted with all the branches of mining; is a good correspondent and accountant; and can assay copper, as well by the humid as Cornish method. He also has a knowledge of assaying other minerals. Would prefer going abroad.—Apply, "H," MINING JOURNAL Office, 26, Fleet-street, London.

**WIRE ROPES.—WANTED, a WORKING MANAGER, to take**  
charge of a WIRE DRAWING and WIRE ROPE-MAKING CONCERN in  
the North.—Address, "B. B.," MINING JOURNAL office, 26, Fleet-street, London.

**WANTED TO PURCHASE, a GOOD SECOND-HAND STEAM ENGINE, of 24 to 28 inch diameter cylinder, for stamping and crushing purposes, with all the modern improvements for the economy in the consumption of fuel, with or without boiler. Also a STAMPS, with 30 to 50 heads.—Apply, with full particulars and lowest cash price, to Mr. J. P. O'REILLY, Secretary, General Mining Company for Ireland (Limited), 39, Westmorland-street, Dublin.**

**TO BE SOLD, a bargain, a FIRST-CLASS CONDENSING BEAM ENGINE,** with 34 inch cylinder, and 4 feet stroke. Can be sold either as it stands, or to be erected with or without boilers.—For particulars, apply to the **ALLIANCE CONTRACT COMPANY, 11, King William-street, London, E.C.**

**T**O BE SOLD, BY PRIVATE CONTRACT, the whole of the JORDAN COLLIERY PLANT, consisting of ONE POWERFUL PUMPING ENGINE, with pumps, spears, &c., complete. ONE COAL-WINDING ENGINE, FOUR BOILERS, WINDLASS, COAL-WEIGHING MACHINE, &c.—Apply to P. COOPER, manager, Holmes Colliery, Rotherham.

**SUPERIOR HEMATITE SCREENED PUDDLING ORE.**—THE DALTON MINING COMPANY are NOW OPEN to RECEIVE ADDITIONAL ORDERS for DRY SCREENED PUDDLING ORE, which is freed from large grains, and admits of being mixed with a large percentage of water to fit it for use.—Address, DENNY BROTHERS and Co., Ulverston.

**H**ORIZONTAL ENGINES FOR SALE, at very low prices:—  
One 12 in. cylinder, 24 in. stroke; one 12 in. cylinder, 36 in. stroke; and two  
14 in. cylinders, 24 in. stroke. All ready for delivery, and may be had with or without  
fly-wheels.—Apply to Messrs. E. PAGE and Co., Laurence Pountney-place Laurence  
Pountney-hill Cannon-street E.C.

**ASSAYS AND ANALYSES.**—MR. JOSEPH GREEN, for the past 14 years professional assayer to the Chester Goldsmiths' Company, UNDERTAKES THE ASSAYING and ANALYSIS of EVERY DESCRIPTION of MINERAL.—Assay Office, Chester.

**T**O SLATE QUARRY PROPRIETORS AND OTHERS.—  
W. P. DAVIS, having had MANY YEARS' PRACTICAL EXPERIENCE in  
SLATE QUARRIES, is PREPARED to INSPECT and FAITHFULLY REPORT  
THEREON.—Address, Mr. W. P. DAVIS, MINING JOURNAL office, 26, Fleet-street,  
London. E.C.

**HARRIS AND CO., STOCK AND SHAREBROKERS,**  
AND FINANCIAL AGENTS,  
15, GEORGE STREET, MANSION HOUSE, LONDON, E.C.

**M**R. D. STICKLAND, M.E., having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon. MINES INSPECTED and faithfully REPORTED ON. DEALER in MINING, RAILWAY, and OTHER SHARES. His monthly Circular forwarded on receipt of six postage stamps. Criddle Mine, St. Iseey, Padstow, Cornwall.

**CAPT. C. WILLIAMS, TYN-Y-WERN, TALIESIN,** via SHREWSBURY, has had upwards of 20 years' practical experience in mining, during which time he had the entire management of several English and Welsh mines. Residing in the centre of the CARDIGANSHIRE MINING DISTRICT, and in close proximity to those of MERIONETHSHIRE and MONTGOMERYSHIRE, he OFFERS HIS SERVICES TO SURVEY and REPORT UPON ANY MINE.

**CAPT. CHARLES WILLIAMS** is at all times in a POSITION to FURNISH CAPITALISTS with RELIABLE INFORMATION respecting MINING in NORTH and SOUTH WALES, in which they should embark or avoid. C. WILLIAMS has prepared a list of most of the mines that are likely to pay, and can name two or three that will turn out a great prize.

**CAPT. J. RABEY OFFERS FOR SALE FIFTY SHARES, at** the net price of £3 per share, in the CAL-R-PANT MINE, joining the great Miners Mine, and one of the best prospects in the district, being all whole ground, and the mine paying for itself now at the shallow depth of 40 yards.—Address, Captain J. RABEY, Coedporth, near Wrexham, Denbighshire, North Wales.

**ROBERT LIBBY AND SON, MINE SHAREDEALERS, &c.**  
CAMBORNE, CORNWALL.

Recommend the following mines for good and sound investment, and must ere long have a great rise:—

East Lowell.	Wheal Grylls.	New Clifford.
		North Dolcoath.

Crane.	Rosewarne United.	Trannack.
East Rosewarne.	Tolvadden.	New Lovell.

N.B.—Parties wishing information as to either one of the above mines can obtain it by applying to R. LIBBY and SON.

**G**OVERNMENT SECURITIES, JOINT-STOCK BANKS,  
RAILWAY DEBENTURES AND BONDS, COLONIAL SECURITIES,  
FOREIGN BONDS, AND BRITISH MINES.—Messrs. TREDINNICK AND CO.,  
of 78, LOMBARD STREET, LONDON, E.C., may be consulted confidentially as to  
the eligibility of all *bond* *ade* investments. A selected list forwarded on application.

**M**ESSRS. TREDINNICK AND CO., STOCK AND SHAREBROKERS, AND DEALERS IN BRITISH MINING SHARES, 78, LOMBARD STREET, LONDON.  
"THE CITY HIVE."—A Journal of Commerce, Banking, and Mining. Price 1d.

**CLAYTON, SHUTTLEWORTH, AND CO.,**  
ENGINEERS,  
MANUFACTURERS OF PORTABLE AND FIXED STEAM ENGINES, MA-  
CHINERY FOR PUMPING, HOISTING, GRINDING, SAWING, &c., ENGINES

for STEAM CULTIVATION, SELF MOVING ENGINES for COMMON ROADS  
and AGRICULTURAL PURPOSES GENERALLY.  
STAMP END WORKS, LINCOLN and  
78, LOMBARD STREET, LONDON.  
ALSO AT

LOWENGASSE No 44, LANDSTRASSE, VIENNA, and GEGENUBER DEM  
BAHNHOF, PESTH.  
Descriptive, illustrated, and priced catalogues free per post.  
SPECIAL DRAWINGS WHEN REQUIRED.  
THE BEST STEAM THRASHING MACHINERY MADE.

**LONDON GENERAL OMNIBUS COMPANY.**—The traffic receipts for the week ending July 2 was 13,424*l.* 0*s.* 6*d.*

in the county of Middlesex, in England, the liquidator appointed for winding-up the affairs of the said company, are hereby REQUIRED, on or before the 14th day of December, 1965, to SEND IN THEIR NAMES AND ADDRESSES, and the PARTICULARS of their DEBTS and CLAIMS, and the names and addresses of their solicitor (if any) to the said Frederick Whinney, or in default thereof they will be excluded from the rights of creditors of the said company.

are proved.  
J. A. BUCKLEY, Chief Clerk.  
FREDERICK WHINNEY, Liquidator.  
VALLANCE and VALLANCE, 20, Essex-street, Strand, London, England,  
Solicitors to the said Liquidator.  
Dated this 14th day of June, 1865.

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TO CAPITALISTS, MINING SPECULATORS, AND OTHERS, SEEKING  
SAFE AND PROFITABLE INVESTMENTS.

TO CAPITALISTS, MINING SPECULATORS, AND OTHERS, SEEKING  
SAFE AND PROFITABLE INVESTMENTS.

**MR. BELL** has been favored with instructions from the Liquidators of the **W. B. BELL, by AUCTION, on Thursday, the 13th day of July, 1895, at Eleven o'clock in the forenoon, as COED CYRUS BELL, of the parish of LEASFERRE in the county of DENBIGH, and about two miles from the town of Mold, in the county of Flint (subject to such conditions as shall be then and there proposed), all the LEASEHOLD ESTATE AND INTEREST OF THE COED CYRUS BELL SILVER LEAD MINE COMPANY of and in the said Mine.**

This Mine is held at the low royalty of 1-16th, and lies between the Catholic and Gwyn-y-mynydd Veins on the north side, and the celebrated Maestrefalon Vein on the south side, about a mile from each, and in precisely the same strata of the non-coniferous limestone rocks. The last two named veins have yielded to the proprietors not less than £100,000 each. This Mine, in a similar manner to the other veins has also in the upper stratum realised a very considerable profit.

For further information apply to **RICHARD HARRISON, Esq., solicitor, Holywell; and T. KELLY, Esq., solicitor, Mold; and Mr. BELL, the auctioneer, Holywell.**

DENBIGHSHIRE.  
IMPORTANT SALE AT COED CYNRIC MINE, in the Parish of LLANFERRAN  
in the County of DENBIGH, and about two miles from the Market Town of Mold.  
MR. R. BELL has the satisfaction to announce that

**M**R. BELL is the satisfaction to announce that he has been retained by the liquidators to OFFER FOR SALE, BY PUBLIC COMPETITION, on Thursday, July 13, 1885, at Twelve o'clock at noon, on the premises above described, all the VALUABLE MACHINERY and other MISCELLANEOUS EFFECTS appertaining to the said Mine, comprising an excellent 36-in. *extensive* *condenser*

[illegible][illegible]

The engine and all other the machinery before mentioned are in excellent condition and of the most approved and latest construction.

**MESSRS. DEBENHAM, TEWSON, AND FARMER** will SELL  
BY AUCTION, on Wednesday, July 26, and two following days, at Two  
o'clock each day, on the premises close to the railway station at Wareham, All the

[illegible]

metal, paint and other oils, pitch, tar, candlewicks, paper and bags, 3000 loads of bricks and shingles, trolleys, stocks and dyes, anvils, forges, vices, smiths' and cooper's tools, 200,000 good bricks, stone work, doors and windows, and numerous effects, in all near 900 lots.

Catalogues of WILLIAM WOODCOCK, Esq., solicitor, 26 Cannon street, Westminster.

**MUNDIRCS—WHEAL FALMOUTH AND SPERRIES MINES**  
—The Committee of this Mine INVITE TENDERS for about FOUR HUNDRED TONS OF COPPER and SULPHURIC MUNDIES. Samples of the same  
A. ELLIS, Esq., 6, Southampton-buildings, Chancery-lane; and of the auctioneer, Messrs. Christie, London, E.C.

be obtained on application to the agents on this mine. The Tenders to be addressed to Mr. John Pascoe, Wheel Falmouth and Sperriss Mine, near Truro, on or before the 31st July inst. The Committee would be disposed to treat with the party whose tender may be accepted for the Mundics raised during the next six or twelve months.

Dated July 3, 1865.

**W**HEAL ARTHUR, CALSTOCK.—This VALUABLE PROPERTY IS OFFERED FOR IMMEDIATE SALE, in One Lot, BY PRIVATE CONTRACT, viz.:—A 80 in. cylinder PUMPING ENGINE, and

new, with TWO 10 ton BOILERS, made by Harvey and Co.; 120 fms. 11, 12, 13 in. pitwork; 90 fms. 13 in. main rods and connections; 70 fms. 10 in. ditto; 3 excellent capstans, with shears 60 ft.; 2 excellent balance-bobs and connections; 80 fms. 3 in. best iron flat-rods, pulleys, &c.; TWO nearly new WATER WHEELS, 56 ft. 3 ft.; DRAWING MACHINE and crusher complete, by Harvey and Co.; 12 heads stamps, &c.; railroad iron, wagons, ladders, &c.; 300 fms. 9-16ths best chain, 18

The mine presents good prospects of becoming as productive as ever upon further pen-  
etration in depth, which can be done for less than £300 per month, the water charge  
being very trifling. The Duchy dues are at present 1s 30th; the carriage to quay,  
or further, is 1s 6d per ton.

Particulars may be obtained of the secretary, Mr. J. H. MUMFORD, 1, Astoria

**TO CAPITALISTS, COLLIERY PROPRIETORS, AND FIRE-BRICK MANUFACTURERS.**

**TO BE SOLD, BY PRIVATE TREATY,** separately or together, the **LEASES of TWO COLLIERIES** in **NORTH WALES**, with **ENGINES & PLANT** in working order. Under upwards of 100 acres of the land there are proved seams of excellent coal, from 26 to 32 ft. in thickness, with every probability of

celebrated Cannel seam being found under the whole take of 247 acres. There are also valuable beds of fire-clay, equal in quality to the Stourbridge clay. Satisfactory results can be given for the sale.

There is easy communication by rail to a shipping-port only a few miles distant. The

purchase-money is moderate, and, if required, part could remain in the undertaking.  
Address, "L. S. D.," Messrs. Minshull and Hughes, booksellers, Chester.

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**MERIONETHSHIRE MINING SETTS FOR SALE.—IRON  
SLATE, AND MANGANESE.**—Or shares in either of the above, situate on  
railways. The iron and manganese of rich quality, and abundant at surface. The slate  
Dolomitic

TO THE LIME AND IRON ORE TRADE, &c.

and INEXHAUSTIBLE LIME ROCKS and FLUXING STONE, not to be surpassed in North Wales, with a railway (nearly completed) running at the foot thereof, offering such facilities for working and burning lime, with cheap transit to the best markets as are seldom to be met with: coals also being within easy reach, &c.

Also, TO BE LET, on the same property, some RICH RED HEMATITE IRON ORE, which has the advantage of the same railway, and offers equal facilities for working. And A VALUABLE BED OF BRICK CLAY.

Applications to be made to Mr. F. W. SMITH, Land and Estate Agent, and Receiver, Castle-street, Ruthin, North Wales.—June 23, 1865.

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**MINERALS IN AYRSHIRE.**

**T**O BE LET for 80 years, and entered to immediately, **BAND and CLAYBAND IRONSTONE, COAL, LIMESTONE, FREESTONE FIRE CLAY, and COMMON CLAY,** within the lands of UPPER and NETHER BEOCH and HEADMARK and KNOCKGULDRON, extending the said lands to be

This field comprises the well-known Aldnaw Smithy Coal, and it is situated within four miles of the Railway Station at Dalmellington.

Offers in writing will be received till 1st August, 1904, at  
York-place, Edinburgh; and for further information application may be made to  
or to Mr. KENNEDY SMITH, Berbeth Mains, Dalmeilington.  
Edinburgh, June 14, 1865.

**MINERALS IN AYRSHIRE.**  
**TO BE LET**, for 30 years, and entered to immediately, the **VERY**  
**SUPERIOR HEMATITE IRON ORE, BLACKBAND, and CLAYBAND IRON**  
**STONE, COAL, LIMESTONE, FREESTONE, FIRE CLAY, SAND, and COMMON**

CLAY, within the lands of GARPEL, UPPER and NETHER WHITE-  
CHAPEL-HOUSE, and NORTH and SOUTH LIMMERHAUGH, extending the  
lands to 4800 acres imperial measure, parts of the estate of CRAIGENGILLAN, situated  
in the parishes of MUIRKIRK and SORN, and shire of AYR.

Offers in writing will be received till 1st August, 1893, by Mr. A. G. Kennedy, 4, 12, York-place, Edinburgh; and for further information application may be made to him or to Mr. KENNEDY SMITH, Berbeth Mains, Dalmellington.

**LEAD MINES TO LET, IN SCOTLAND.—TO BE LET,**

**L** such a number of years as may be agreed on, late rent  
INVERNESS-SHIRE, SCOTLAND, belonging to the Lord Lovat. The mine  
situated about twelve miles from Beany Railway station, and where there is also  
shipping port.—For further particulars, application may be made to CHRISTOPHER  
Schewenclau, Esq., Perthshire; or to JOHN PETER, factor for Lo

**FOR SALE, the RIGHT to the PATENT of a VALUABLE**  
**IMPROVED VALVE AND BUCKETS for PUMPS, and in VALVE**

or COCKS for OTHER USES.—For particulars, apply to Mr. W. T. Baxendale, and mining agent, 39, Budge-street, Bristol.

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**NICHOLLS, WILLIAMS, AND CO., ENGINEERS,**  
REDFORD IRONWORKS, TAVISTOCK.  
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made on the BEST AND NEWEST PRINCIPLES. We beg to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of the leading engineers. PUMP WORK CASTINGS OF EVERY DESCRIPTION, both of iron and steel. HAMMERED IRON AND HEAVY SHAFTS OF ANY SIZE. CRANKS made of the best iron, and warranted. RAILWAY WORK OF EVERY DESCRIPTION.  
ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION. NICHOLLS, WILLIAMS, AND CO. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.  
Messrs. NICHOLLS, WILLIAMS, AND CO. have always a LARGE STOCK OF SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

**PATENT FLEXIBLE TUBING,**  
AND BRATTICE CLOTH FOR MINES,  
MANUFACTURED BY  
**ELLIS LEVER,**  
PATENTEE,  
WEST GORTON WORKS, MANCHESTER.

**TAVISTOCK IRONWORKS AND STEEL ORDNANCE COMPANY (LIMITED).**  
(INCORPORATED BY ACT OF PARLIAMENT)  
ENGINEERS, IRON AND BRASS FOUNDERS,  
MANUFACTURERS OF  
STEAM ENGINES, BOILERS, AND MACHINERY OF ALL KINDS.  
CHAINS, SHOVELS, EDGE TOOLS, AND EVERY DESCRIPTION OF CAST AND HAMMERED IRON FOR MINING, MANUFACTURING, RAILWAY, OR AGRICULTURAL PURPOSES.  
Machinery sent to all parts of the world.  
Foreign mining companies supplied on liberal terms.

**RAILWAY CARRIAGE COMPANY (LIMITED),**  
ESTABLISHED 1847.  
OLDBURY WORKS, NEAR BIRMINGHAM.  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, AND EVERY DESCRIPTION OF IRONWORK.  
Passenger carriages and wagons built, either for cash or for payment over a period of years.  
RAILWAY WAGONS FOR HIRE.  
CHIEF OFFICES, OLDBURY WORKS, NEAR BIRMINGHAM.  
LONDON OFFICES, 4, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

**THE BEVERLEY IRON AND WAGON COMPANY (LIMITED).**  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, WROUGHT AND CAST IRON CARRIAGE AND WAGON WHEELS, AXLES, HAMMERED IRON, AND HEAVY SMITHS' WORK FOR ENGINEERS, &c. BRASS AND IRON FOUNDRY, MAKERS OF PORTABLE FARM RAILWAYS, TURNABLES, CROSSINGS, SWITCHES, &c. AGRICULTURAL MACHINISTS. MANUFACTURERS OF FIELD, ROAD, AND BARN IMPLEMENTS, PATENT LORRY, CART, AND CARRIAGE WHEELS, WITH WOOD OR IRON NAVES. REAPING MACHINES, CLOD CRUSHERS, CORN MILLS, &c. SAW MILL PROPRIETORS. GENERAL TIMBER CONVERTERS FOR HOME AND FOREIGN RAILWAYS, STATIONS, BRACKS, EXHIBITIONS, &c.  
IRONWORKS, BEVERLEY, YORKSHIRE.  
JAMES DEWHIRST, Sec.

**THE BIRMINGHAM WAGON COMPANY (LIMITED)**  
MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, FOR HIRE AND SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.  
EDMUND FOWLER, Sec.  
OFFICES, 3, NEWHALL STREET, BIRMINGHAM.

**LOCOMOTIVE, PORTABLE, AND FIXED HORIZONTAL**  
STEAM ENGINES, all sizes up to 24 in. cylinder, PUMPING AND WINDING GEAR, MOIST MILL, SAW BENCHES, PORTABLE CRANES, &c. FOR SALE OR HIRE.  
ISAAC W. BOULTON, ASHTON-UNDER-LYNE.

**PATENT CONCRETE STONE**  
(RANSOME'S PATENT).  
Which for STRENGTH, DURABILITY, CHEAPNESS, SHARPNESS OF OUTLINE, BEAUTY OF APPEARANCE, and above all for its PERFECT RESEMBLANCE TO NATURAL STONE, stands unrivalled, and being MADE WITHOUT BURNING is free from all liability of shrinkage or distortion. It surpasses all other material in its applicability to every description of ARCHITECTURAL EMBELLISHMENTS, and especially for CAPITALS, CORNICES, WINDOW DRESSINGS, trusses, balustrades, gate piers, terminals, &c., as well as for fountains, vases, jardinettes, statues, flower boxes, and edgings for garden borders; also for monuments, tombs, and all kinds of cemetery requirements.  
Licenses granted for the manufacture of this remarkable material, and agents appointed in any part of the United Kingdom.  
References given to works already executed, and to several engineers and architects of the highest eminence by whom it has been applied, also to existing licensees whose works are in full operation in different parts of the kingdom.  
Specimens and illustrations furnished upon application at the offices of the  
**PATENT CONCRETE STONE COMPANY (LIMITED), 2, QUEEN STREET PLACE, SOUTHWARK BRIDGE, E.C.**

**CHARLES DAVEY AND CO.,**  
SAFETY FUSE MANUFACTURERS,  
ST. HELEN'S JUNCTION, LANCASHIRE.

**BASTIER'S PATENT CHAIN PUMP,**  
APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY APPLICABLE TO ALL KINDS OF MINES, DRAINAGE, WELLS, MARINE, FIRE, &c.

J. U. BASTIER begs to call the attention of proprietors of mines, engineers, architects, farmers, and the public in general to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shafts, and unites lightness with a degree of durability almost imperishable. By means of this hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine as daily demonstrated by use—

- 1.—It utilizes from 90 to 95 per cent. of the motive power.
- 2.—Its price and expense of installation is 75 per cent. less than the usual pumps employed for mining purposes.
- 3.—It occupies a very small space.
- 4.—It raises water from any depth with the same facility and economy.
- 5.—It raises with the water, and without the slightest injury to the apparatus, sand, mud, wood, stone, and every object of a smaller diameter than its tube.
- 6.—It is easily removed, and requires no cleaning or attention.

BASTIER'S PATENT CHAIN-PUMP may be seen daily in operation at Messrs. SAMUEL BERNER and Co.'s Patent Rice Starch Works, Bromley-by-Bow, London, E. Cards of admission to be had on application to the inventor and patentee, Mr. J. U. BASTIER, C.E., 142, Gower-street North, London.  
J. U. BASTIER, sole manufacturer, will CONTRACT TO ERECT HIS PATENT PUMP AT HIS OWN EXPENSE, and will GUARANTEE IT FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors, and others, for the USE of his INVENTION.  
OFFICES, 142, GOWER STREET NORTH, LONDON.  
London, March 21, 1865. Hours from Ten till Four. J. U. BASTIER C.E.

**THE HARDWARE WEEKLY MESSENGER.**  
**CHARLES RYLAND AND SONS' IRON TRADE CIRCULAR**  
AND HARDWARE WEEKLY MESSENGER.

"Iron Trade Circular" is eminently the business journal of the mining districts, and a complete and reliable source of information. Its information is authentic, unaltered, and complete, comprising not only the business news of the South and North Yorkshire districts, but generally of the entire mining and manufacturing districts of the United Kingdom. It is now proposed to add a collection of special and general information in the interests of the Hardware Trades of Birmingham, Sheffield, and London, to be comprised in a department of the "Iron Trade Circular," under the head of "The Hardware Weekly Messenger." Subscription:—  
One year (post free) ..... £2 2 0  
Half-year (post free) ..... 1 1 0  
Quarter of a year (post free) ..... 0 10 6  
Payable in advance.  
Advertisements and orders to be addressed Union-passage Birmingham.  
CHARLES RYLAND AND SONS, Iron and Metal Brokers.

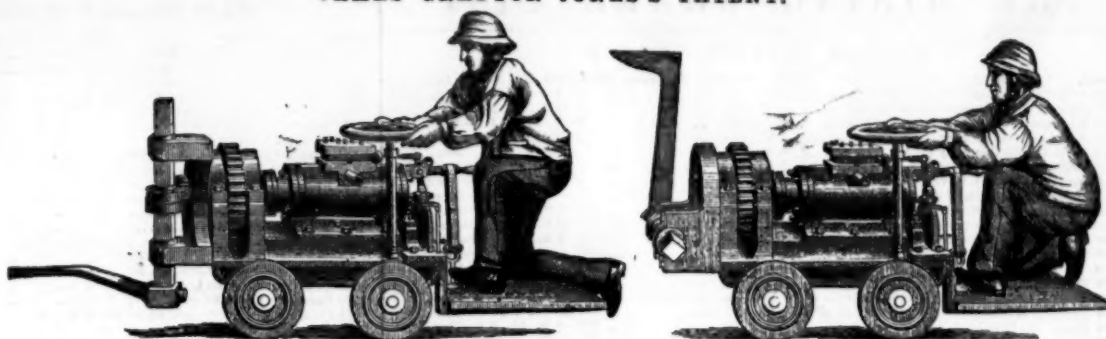
**THE STOCKTON AND HARTLEPOOL MERCURY AND**  
MIDDLESBOROUGH NEWS (published at Hartlepool) is eminently the organ of the Coal, Iron, and Iron Ship-building Trades in the extensive Mining and Maritime District of South Durham and Cleveland, with which it has been closely identified since its origin. The "Mercury" was for years the only newspaper published in South Durham and Cleveland, and is yet the only one published more than once a week. Advertisements to be forwarded to the publisher, Mr. JOHN H. BULL, Southgate, Hartlepool.

**THE NEWCASTLE CHRONICLE AND NORTHERN**  
COUNTIES ADVERTISER. (ESTABLISHED 1764).  
Published every Saturday, price 2d., or quarterly 2s. 2d.  
Office, 45, Grey-street, Newcastle-upon-Tyne; 60, Howard-street, North Shields.  
185, High-street, Sunderland.

**DR. SMITH, who has had twenty years' practical experience in the**  
treatment of Debility, Spasmodic Disorders of the Nervous System, &c., has published A GUIDE (125 pages) for Self-Cure. Sent to any address on receipt of 6d. Dr. SMITH may be consulted personally (or by letter) in all private and W.C. Consultations daily from Eleven to Five.

## COAL CUTTING MACHINERY.

JAMES GRAFTON JONES'S PATENT.



Pick in position for boring.

Pick in position for vertical cut downwards.

Pick in position for vertical cut upwards.

Messrs. JONES and LEVICK, proprietors of this patent, are prepared to supply these Machines, which are on an improved principle, and are constructed to work the coal at any angle from the horizontal to the vertical, thus rendering them capable of "holeing" at any angle, and of driving "headings." They are simple and substantial in construction, and are not likely to get out of order. They are already successfully employed in the Barnsley coal district, and are being introduced into the South Wales and other coal mining districts. They are also suitable for mining the argillaceous ironstones of the coal measures, as well as working other mines and quarries.

N.B.—Air Compressing Machinery will be supplied, or plans and specifications furnished.

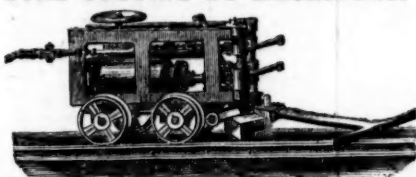
Applications to be made to Messrs. FREDERICK LEVICK and Co., 4, Charlotte-row, Mansion House, London; or Messrs. LEVICK and SIMPSON, Blaina Ironworks, near Newport, Monmouthshire.

## COAL CUTTING MACHINERY.

The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS FOR THE CONSTRUCTION AND USE OF THEIR MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN THE COST AND IMPROVE THE AVERAGE SIZE OF THE COAL, TO LIGHTEN THE LABOUR, and also TO MODIFY THE SANITARY CONDITION OF THE MINE. All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWER, No. 8, Britannia-street, Leeds.

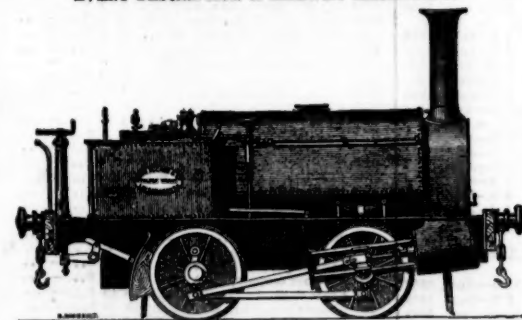
**NOTICE.**—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, OR USE ANY MACHINERY in the construction of which any such INFRINGEMENT IS MADE.

## COAL CUTTING BY MACHINERY.



MESSRS. RIDLEY AND CO. have, by recently PATENTED IMPROVEMENTS, COMPLETED THEIR TRUNK COAL CUTTING MACHINE, WORKED BY COMPRESSED AIR, and are NOW PREPARED TO NEGOTIATE FOR THE USE, and TO SUPPLY MACHINES, which will be found to COMBINE SIMPLICITY OF CONSTRUCTION WITH PORTABILITY AND ECONOMY IN WORKING. By the use of these machines a CONSIDERABLE SAVING OF COAL IS EFFECTED, and the COST OF LABOUR MUCH REDUCED. Each machine will be guaranteed as to its capabilities, &c.  
All applications to be made to Messrs. RIDLEY and Co., No. 11, South-street, Finsbury London, E.C.; or Mr. PERCY BANKART, agent, 9, Clement's-lane, E.C.  
COALIERY PROPRIETORS are CAUTIONED AGAINST PURCHASING OR USING MACHINES, the construction of which will constitute an INFRINGEMENT OF THE ABOVE PATENT.

**HENRY HUGHES AND CO.,**  
**FALCON RAILWAY PLANT WORKS,**  
LOUGHBOROUGH,  
ENGINEERS, IRONFOUNDERS, BOILER MAKERS, AND MANUFACTURERS OF EVERY DESCRIPTION OF RAILWAY MACHINERY.



LOCOMOTIVE ENGINES, for MINERAL and CONTRACTORS' RAILWAYS, of the best materials and workmanship, always in progress. These engines are designed to supply the chief requisites in tank locomotives—viz., reduction of the overhanging weight at the fire-box end, proper distribution of the weight upon the wheels, and keeping the centre of gravity low. These are accomplished by making the fire-box and its shell on an improved principle, which enables the driving axle to be placed further back without interfering with the eccentrics and valve gear, which are of the usual simple description.

Swan Rope Works.

**GARNOCK, BIBBY, AND CO.,**  
CHAPEL STREET, LIVERPOOL.  
MANUFACTURERS OF FLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.  
MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, and THIRTY PER CENT. CHEAPER than Russian hemp rope.  
WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

## BLASTING.

AS NOW ADAPTED BY LENK'S PROCESS  
IS THE CHEAPEST AND SAFEST EXPLOSIVE,  
AND FREE FROM SMOKE.  
Prices and directions for use on application to the Manufacturers,  
THOMAS PRENTICE AND CO.,  
175, FENCHURCH STREET, LONDON, E.C.  
MANUFACTORY, STOWMARKET, SUFFOLK.

First Class Silver Medal, Royal Polytechnic Society, Falmouth, 1864.

**CREASE'S PNEUMATIC TUNNELLING ENGINE,**  
for SUPERSEDING THE SLOW AND EXPENSIVE USE OF MANUAL LABOUR IN SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to drive through any rock of average hardness at a minimum rate of 1 ft. per diem, and to sink shafts at the rate of 3 fms. in three days.  
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.  
Applications to be addressed (for the present) to the patentee, Mr. E. S. CREASE, Tavistock, Devon.

International Exhibition, 1862—Prize Medal.



**JAMES RUSSELL AND SONS**  
(the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, have been AWARDED A PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.  
Warehouse, 81, Upper Ground-street, London, S.

**BICKFORD'S PATENT SAFETY-FUSE OBTAINED THE PRIZE MEDALS** at the ROYAL EXHIBITION of 1851, at the INTERNATIONAL EXHIBITION of 1862, in London, and at the IMPERIAL EXPOSITION held in Paris, in 1855.



**BICKFORD, SMITH, AND CO.,**  
TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—  
EVERY COIL OF FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.

Prize Medals—International Exhibition, Class 1 and 2.

## PATENT PLUMBAGO CRUCIBLES.

The CRUCIBLES manufactured by the PATENT PLUMBAGO CRUCIBLE COMPANY are the ONLY KIND for which a MEDAL has been AWARDED, and are now used exclusively by the English, Australian, and Indian Mints; the French, Russian, and other Continental Mints; the Royal Arsenal of Woolwich, Fleet, and Toulon, &c.; and have been adopted by most of the large ENGINEERS, BRASSFOUNDERS, and REFINERS in this country and abroad. The GREAT SUPERIORITY of these melting pots consists in their capability of melting on an average 40 pourings of the most difficult metals, and a still greater number of those of an ordinary character, some of them having actually reached the EXTRAORDINARY NUMBER of 96 meltings. They are unaffected by change of temperature, never crack, and become heated much more rapidly than any other crucibles. In consequence of their great durability, the saving of waste is also very considerable.

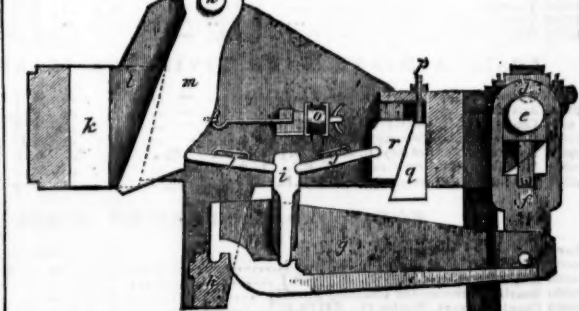
The company have recently introduced CRUCIBLES SPECIALLY ADAPTED for the following purposes, viz.:—MALLEABLE IRON MELTING, the average working of which has proved to be about seven days; STEEL MELTING, which are found to save nearly 1 1/2 ton of fuel to every ton of steel fused; and for ZINC MELTING, lasting much longer than the ordinary iron pots, and saving the great loss which arises from mixture with iron.

The Patent Plumbago Crucible Company likewise manufacture and import Clay Crucibles, Muffles, Portable Furnaces, &c., Stove Backs, all descriptions of fire-standing goods, and every requisite for the Assayer and Dentist.

For lists, testimonials, &c., apply to the Patent Plumbago Crucible Company, Battersea Works, London, S.W.

## BLAKE'S PATENT STONE BREAKER

OR ORB CRUSHING MACHINE,  
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.



It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England.

The above section illustrates Blake's Stone Breaker, just as made the last five years and is fully protected in every part by patents.

Extract from Specification:—A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement, and combination of powerful levers, worked by a crank or eccentric on the main shaft.

LEGAL PROCEEDINGS will be taken at once against any person or persons found making, using, or vending any machine, the construction of which will constitute an infringement on the above patent. Read extracts of testimonials:—

*Alkali Works, near Wednesbury.*—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

*Welsh Gold Mining Company, Dolgelly.*—The stone breaker does its work admirably crushing the hardest stones and quartz. WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard winstone in 20 minutes, for fine road metal, free from dust. Messrs. ORD and MADDISON.

*Kirkless Hall, near Wigan.*—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton. JOHN LANCASTER.

*Oreos, Ireland.*—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS.

*General Fremont's Mines, California.*—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.

For circulars and testimonials, apply to—

**H. R. MARSDEN, SOHO FOUNDRY,**  
MEADOW LANE, LEEDS.

Only maker in the United Kingdom.



## THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per Share.	Last paid.
1200	Adelphi Edge (cop.), Cheshire [L.]	10 0 0	—	—	11 3 0	0 18 0	Dec. 1864
4000	Adelphi United (cop.), Cheshire [L.]	2 8 0	—	—	13 11 0	0 2 0	Oct. 1864
1348	Boscawell (tin), Cornwall [L.]	3 0 0	—	—	1 5 0	0 8 0	May, 1865
300	Boscawell (tin), Cornwall [L.]	31 5 0	—	—	480 16 0	0 3 0	May, 1865
10000	British State Company [L.]	7 0 0	—	—	8 per cent.	—	Mar. 1865
1600	Brigham Hamatite Iron [L.]	6 7 0	—	—	0 8 0	0 8 0	Nov. 1864
1000	Bryn Gwyn (lead), Mold, [L.]	12 0 0	—	—	6 5 0	0 15 0	Apr. 1865
1200	Bryn Gwyn (lead), Mold, [L.]	9 0 0	—	—	—	2 10 0	Mar. 1865
916	Cargill (silver-lead), Newlyn [L.]	18 7 0	29	29 31	10 15 0	0 15 0	May, 1865
1500	Carn Brea (copper), Cornwall [L.]	15 0 0	—	—	280 10 0	0 2 0	June, 1864
3880	Clifford Amalgamated (cop.), Gwent [L.]	28 0 0	26 27	26 27	55 6 0	0 10 0	June, 1865
3000	Copper Mines of England [L.]	28 0 0	—	—	75 per cent.	—	Half-yearly
40000	ditto [L.]	100 0 0	—	—	1 per cent.	—	Half-yearly
847	Cwm Erlyn (lead), Cardiganshire [L.]	7 10 0	40	40	16 15 0	1 0 0	June, 1865
1200	Cwmystwl (lead), Cardiganshire [L.]	40 0 0	—	—	235 10 0	0 4 0	Apr. 1865
2800	Derwent Mines (sil.-lead), Durham [L.]	300 0 0	—	—	149 10 0	0 7 0	June, 1865
1024	Devon Tin. Con. (cop.), Tavistock [S.E.]	1 0 0	—	—	97 0 0	0 10 0	June, 1865
888	Dolcoath (copper), Cornwall [L.]	128 16 0	—	—	798 10 0	0 5 0	June, 1865
812	East Basset (cop.), Redruth [S.E.]	29 10 0	17	14 15	128 0 0	0 10 0	Nov. 1864
4000	East Carn Brea (copper), Redruth [S.E.]	8 15 0	6 1/4	6 1/4	0 5 0	0 5 0	June, 1865
6144	East Carn Brea (copper), Redruth [S.E.]	13 14 13	13	12 1/2	13 20 0	0 10 0	Apr. 1865
800	East Darren (lead), Cardiganshire [L.]	22 0 0	—	—	105 10 0	0 2 0	Apr. 1865
1200	East Pool (tin), Cornwall [L.]	24 0 0	—	—	249 10 0	0 4 0	June, 1864
5000	East Rosemarie (cop.), Cornwall [L.]	2 15 0	2 1/2	2 1/2	0 7 0	0 3 0	May, 1865
2800	Foxdale (lead), Isle of Man [L.]	25 0 0	—	—	67 0 0	0 1 0	May, 1865
4000	Frank Mills (lead), Christow [L.]	25 0 0	—	—	2 7 0	0 7 0	May, 1865
15000	Great Laxey (lead), Isle of Man [L.]	4 0 0	20	20	6 19 0	0 17 0	June, 1865
4908	Great Wh. Vor (tin), Helston [S.E.]	40 0 0	32	31 32	15 0 0	0 5 0	Aug. 1865
119	Great Work (tin), Gernoe [L.]	100 0 0	—	—	35 5 0	0 15 0	June, 1865
1024	Herodfoot (id.), near Liskeard [S.E.]	8 10 0	—	—	433 10 0	0 3 0	Apr. 1865
400	Lisburne (lead), Cardiganshire, Wales [L.]	18 15 0	—	—	1 0 0	1 0 0	Oct. 1864
2000	Mass-y-Safn (lead) [L.]	20 0 0	—	—	3 0 0	0 2 0	Apr. 1865
3000	Marke Valley (copper), Cardigan [L.]	4 10 0	—	—	0 8 0	0 2 0	June, 1865
3000	Miners Boundary (cop.), Wrexham [L.]	1 0 0	—	—	175 3 0	0 5 0	May, 1865
1800	Miners Mining Co. (L.) [id.], Wrexham [L.]	2 0 0	—	—	19 2 10	0 16 0	Jan. 1865
30000	Miners of Co. of Ireland (cop.) [L.]	2 10 0	—	—	0 4 0	0 2 0	Apr. 1864
40000	Mynydd (ironore) [L.] [S.E.]	2 10 0	—	—	0 11 0	0 6 0	Apr. 1864
800	Nanty Mines (lead), Montgomery [L.]	20 0 0	—	—	0 13 0	0 2 0	Feb. 1864
800	New Birch Tor and Vitrifer Con. (tin)	1 4 0	—	—	142 10 0	0 7 0	Apr. 1865
8924	North Trekerby (copper), St. Agnes [L.]	1 0 0	2 1/4	—	77 8 0	0 10 0	May, 1865
300	Parya Mines (copper), Anglesey [L.]	40 0 0	—	—	483 10 0	0 8 0	May, 1865
1190	Providence (tin), Uny Lelant [S.E.]	10 6 7	32 1/4	31 33	0 5 0	0 5 0	May, 1865
30	Silver Lake Mining Company [L.]	280 0 0	—	—	0 8 0	0 8 0	May, 1865
812	South Caradon (cop.), St. Cleer [S.E.]	1 0 0	—	—	0 5 0	0 5 0	May, 1865
4000	St. Day United (tin), Redruth [L.]	14 0 0	—	—	490 10 0	0 10 0	May, 1864
940	St. Ives Consols (tin), St. Ives [L.]	8 0 0	—	—	17 1 0	0 10 0	June, 1865
6000	Tincroft (cop. tin), Pool, Helston [S.E.]	1 10 0	17 1/2	—	5 10 0	0 6 0	Mar. 1865
2000	West Basset (copper), Illogan [S.E.]	1 10 0	—	—	53 10 0	0 10 0	Mar. 1865
9000	W. Chiverton (id.), Perranarabuth [S.E.]	80	77 1/2	80	483 0 0	0 4 0	June, 1865
286	West Damsel (copper), Gwennap [L.]	38 10 0	—	—	296 10 0	0 1 0	May, 1865
400	W. H. Seton (cop.), Camborne [S.E.]	47 10 0	185	—	15 0 0	0 10 0	Aug. 1864
512	Wheal Basset (copper), Illogan [S.E.]	5 2 0	—	—	2 9 0	0 3 0	May, 1865
1024	Wheal Friendship (copper), Devon [L.]	20 0 0	—	—	59 17 0	0 10 0	Mar. 1865
512	Wheal Jane (silver-lead), Ken [L.]	3 10 0	—	—	258 5 0	0 4 0	Mar. 1864
4928	Wheal Kitty (tin), St. Agnes [S.E.]	4 8 0	—	—	24 0 0	0 5 0	Mar. 1864
1024	Wh. Mary Ann (id.), Menhen [S.E.]	8 0 0	—	—	201 15 0	0 5 0	June, 1865
100	Wheal Mary (tin), Lelant [L.]	38 2 0	—	—	52 0 0	0 10 0	June, 1865
80	Wheal Owles (tin), St. Just, Cornwall [L.]	70 0 0	—	—	15 3 0	0 6 0	May, 1865
398	Wheal Seton (tin), Cornwall, Camborne [L.]	88 10 0	205	197 1/2	—	—	—
1040	Wh. Trevelyan (id.), Liskeard [S.E.]	6 17 0	18	17 1/2	—	—	—
7000	Wicklow (copper) [L.], Wicklow [L.]	2 10 0	—	—	—	—	—

\* Dividends paid every two months. † Dividends paid every three months.

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

340	Boscawell (tin), St. Just	20 10 0	—	—	26 10 0	1 0 0	Mar. 1865
340	Conduff (cop. tin), Camborne	76 10 0	55	—	85 0 0	2 0 0	June, 1865
2450	Cook's Kitchen (copper), Illogan	18 5 0	9	—	1 7 0	0 7 0	May, 1865
1024	Copper Hill (copper), Redruth	12 0 0	—	—	2 7 0	—	Sept. 1865
1024	Craddock Moor (copper), St. Cleer	8 14 0	—	—	7 12 0	0 4 0	June, 1865
4076	Devon and Cornwall (cop.), Tavistock	8 8 0	—	—	0 10 0	0 2 0	Feb. 1865
12800	Drake Valley (tin), Calstock	2 1 0	—	—	0 18 0	0 1 0	May, 1865
4000	Drygwyn (lead), Wales	3 0 0	—	—	17 6 0	0 3 0	Jan. 1865
1908	East Wheal Lovell (tin), Wendron	12 6 0	10 1/2	9 10	1 10 0	0 16 0	May, 1864
940	Fowey Consols (copper), Tywardreath	4 11 6	—	—	41 9 0	0 2 0	June, 1865
6000	Great South Tois (copper), Redruth	0 14 6	3 1/2	—	7 18 0	0 5 0	Dec. 1864
0240	Gunnislake (Clitters' Adit) (copper)	0 2 0	—	—	0 3 0	0 1 0	May, 1865
160	Levant (copper), St. Just	2 10 0	—	—	1091 0 0	0 8 0	May, 1864
840	Mount Pleasant (lead), Mold	4 0 0	—	—	18 18 0	0 7 0	Aug. 1864
8000	Oradell (lead), Flintshire	0 0 0	—	—	0 10 0	0 8 0	Mar. 1865
8400	Par Consols (cop.), St. Blazey [S.E.]	1 3 0	—	—	36 10 0	0 2 0	Mar. 1865
1772	Pelberron (tin), St. Agnes	15 0 0	—	—	7 19 0	0 10 0	Nov. 1865
612	Pelberron (tin), St. Agnes	8 0 0	—	—	1 0 0	0 1 0	Nov. 1865
6000	Rosewell Hill and Ransom United	3 0 0	—	—	0 10 0	0 1 0	June, 1865
812	South Tois (cop.), Redruth	8 0 0	—	—	74 10 0	0 1 0	May, 1865
496	S. Wh. Frances (cop.), Illogan [S.E.]	18 18 0	—	—	870 18 0	1 0 0	Nov. 1865
280	Spears Moor (tin), Cornwall, St. Just	3 17 0	—	—	9 15 0	0 10 0	Sept. 1864
873	Trelyon Consols (tin), St. Ives	15 0 0	—	—	11 0 0	0 2 0	Mar. 1865
1000	Trumpet Consols (tin), near Helston	11 10 0	—	—	6 2 0	0 10 0	Oct. 1865
4924	Vigra and Clogau (copper) [L.]	5 0 0	—	—	101 1 3	0 10 0	Oct. 1865
1024	West Caradon (cop.), Liskeard [S.E.]	10 0 0	—	—	76 8 0	0 1 0	May, 1865
1000	Wheal Basset and Grylls (tin)	7 0 0	—	—	0 19 0	0 3 0	May, 1865
1024	Wheal Kitty (tin), Uny Lelant [S.E.]	13 12 0	—	—	—	—	—
898	Wheal Margaret (tin), Uny Lelant	13 12 0	—	—	—	—	—
3044	Wheal Trevelyan (tin), Gwennap	6 11 3	1 1/2	1 1/2	—	—	—
8400	West Fowey Consols (tin and copper)	7 10 0	—	—	—	—	—
8000	Wharfedale Mining Company [L.]	0 5 6	—	—	—	—	—

## FOREIGN DIVIDEND MINES.

2484	Burra Burra (cop.), South Australia	8 0 0	—	—	320 0 0	0 5 0	Sept. 1864
15000	Cape Copper Mining [L.] [S.E.]	7 0 0	11 1/2	11 1/2	2 2 0	0 17 0	June, 1865
12000	Cobra Copper Co. (cop.), Cuba [S.E.]	40 0 0	27	25 27	101 0 0	1 0 0	Jan. 1865
70000	English and Australian	8 0 0	—	—	12 0 0	0 2 0	Aug. 1864
15000	East Indian Coal, Calcutta [L.]	10 0 0	—	—	7 1/2 per cent.	—	Yearly
25000	Fortuna (lead), Spain [L.] [S.E.]	2 0 0	3 1/2	3 1/2	0 14 0	0 3 0	Dec. 1864
28000	Gen. Mining Assoc., Nova Scotia [L.]	20 0 0	22 24	—	21 10 0	0 10 0	June, 1864
8000	Kapunda Mining Co., Australia [S.E.]	1 0 0	—	—	0 12 0	0 10 0	June, 1864
15000	Lisburne (lead), Spain [L.] [S.E.]	3 0 0	—	—	11 6 4	0 6 0	Jan. 1865
10000	Lusitania (Portugal) [S.E.]	2 0 0	—	—	1 7 0	0 3 0	June, 1865
9000	Panillio (copper) [L.] [S.E.]	3 0 0	—	—	0 10 0	0 10 0	Aug. 1864
10000	Pontalva (sil.-lead), France [S.E.]	3 0 0	—	—	7 1/2 per cent.	—	Yearly
9726	Port Phillip (gold), Clunes [S.E.]	1 0 0	—	—	2 3 0	0 16 0	Dec. 1864
11000	St. John del Rey [L.], Brazil [S.E.]	15 0 0	4 1/2	4 1/2	0 12 0	0 1 0	July, 1864
43174	United Mexican (sil.), Mexico [S.E.]	28 8 0	—	—	68 15 0	0 2 0	June, 1864
10000	Vancouver (coal) [L.] [S.E.]	5 0 0	—	—	0 15 0	0 5 0	Nov. 1865
50000	Victoria (London) Mining Co. [L.]	1 0 0	—	—	0 7 0	0 5 0	Jan. 1865
40000	West Canada Mining Company [L.]	1 0 0	—	—	0 19 0	0 2 0	May, 1865

## FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Alton and Quannan United (cop.) [L.] [S.E.]	4 10 0	—	—	4 5 0	0 15 0	Nov. 1865
20000	Australian (cop.), S. Australia [S.E.]	7 0 0	—	—	0 10 0	0 10 0	Dec. 1865
4000	Central American (silver), Cuba [S.E.]	8 0 0	—	—	4 6 0	0 14 0	Dec. 1865
10000	Copio Mining Company, Chile [L.]	16 0 0	—	—	6 18 0	0 10 0	Nov. 1865
100000	Don Pedro No. Del Rey [L.] [S.E.]	0 12 0	—	—	0 9 0	0 9 0	Dec. 1865
108818	Marquette and New Granada [S.E.]	1 0 0	—	—	0 5 0	0 5 0	July, 1865
45000	Yudamutana (cop.), S.A. [L.] [S.E.]	3 0 0	1 1/2	—	0 5 0	0 5 0	Aug. 1865

## NON-DIVIDEND FOREIGN MINES.

Mines.		Paid.	Last Pr.	Bus. done.	Last Call.	
80000	Alamillos (lead), Spain [L.] [S.E.]	1 10 0	..	1%..1% 1%	..	April, 1865
100000	Anglo-Brazilian (gold) [L.] [S.E.]	0 6 0	..	..	..	Dec. 1865
20000	Bearis Tin Streaming Company [L.]	0 17 6	..	..	..	Oct. 1863
28000	Capila (silver), Mexico [L.] [S.E.]	1 5 0	..	..	..	Feb. 1864
10000	Copio Smelting [L.], Chili	10 0 0	..	..	..	..
50000	Dun Mountain (copper), New Zealand [L.] [S.E.]	1 0 0	..	..	..	..
15000	East del Rey (gold), Brazil [L.] [S.E.]	2 5 0	..	..	..	..
40000	El Chico Silver Mining and Reduction Company [L.] [S.E.]	3 0 0	..	..	..	April, 1865
80000	English and Canadian Mining Company [L.]	6 0 0	..	..	..	..
80000	Fortuna (lead), Spain [L.] [S.E.]	2 0 0	..	..	..	..
10000	Gonnessa (lead) [L.] [S.E.]	1 0 0	..	2%..1% 2%	..	Mar. 1865
80000	Great Northern (copper), South Australia [L.] [S.E.]	1 10 0	..	..	..	May, 1865
10000	Great Barrier Land, Mining, &c., New Zealand [L.]	5 0 0	..	..	..	June, 1862
24000	Hindostan (copper), Bengal [L.] [S.E.]	8 0 0	..	..	..	..
4000	Hope Silver-Lead and Copper Mining Co. [L.], Jamaica	25 0 0	..	..	..	Feb. 1863
100000	Lagunas (sulphur, copper), Portugal [L.]	1 0 0	..	..	..	..
80000	Montes Aurores (gold), Brazil [L.] [S.E.]	2 0 0	..	3% 3% 3%	..	..
80000	Nova Scotia (lead and gold) [L.] [S.E.]	1 0 0	..	..	..	..
10000	Ota (copper) New Zealand [L.] [S.E.]	1 0 0	..	..	..	Nov. 1862
18000	Pachuca Silver Mining Company, Mexico [L.] [S.E.]	1 0 0	..	..	..	Mar. 1865
6000	Real River Lead and Minerals (Limited)	1 0 0	..	..	..	June, 1863
100000	Quebrada (copper), Venezuela [L.] [S.E.]	100 0 0	..	..	..	..
10178	Rhenish Consolidated (lead) [6000 £ paid, 4178 30s. paid.]	7 10 0	..	..	..	Sept. 1864
10000	Rossa Grande (gold), Brazil [L.] [S.E.]	0 6 0	..	..	..	Mar. 1865
10000	San Roque (lead), Spain	5 0 0	..	..	..	April, 1864
10000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 15 0	..	1% 1% 1%	..	..
100000	South Australian Mining Company [L.] [S.E.]	0 17 6	..	3%	..	Feb. 1864
10000	Teplitz Colliery Co., Bohemia [L.] [S.E.]	3 0 0	..	..	..	..
10000	Val Antigua (gold), [L.] [S.E.]	3 0 0	..	..	..	June, 1863
10000	Val Rascam (silver, copper, and lead) [L.] [S.E.]	0 10 0	..	1 .. 3% 1	..	..
10000	Valgodemard Mining Company [L.] [S.E.]	3 0 0	..	..	..	April, 1865
10000	Vallanosa (gold), Italy [L.] [S.E.]	15 0 0	..	..	..	Mar. 1865
10000	Victor Emanuel (copper), Italy [L.] [S.E.]	0 10 0	..	2%..2% 2%	..	Oct. 1864
10000	Washoe (gold) [10000 £ paid, 10000 £ paid]	1 0 0	..	..	..	..
10000	Western Africa Malachite (copper) [L.]	110 0 0	..	..	..	Oct. 1862
10000	Wheat Elen (copper), South Australia [L.]	5 0 0	..	..	..	..
10000	Worth (copper), South Australia [L.] [S.E.]	1 0 0	..	1 .. 3% 1	..	..
10000	Yorke Peninsula, South Australia [L.]	1 0 0	..	3% 3% 3%	..	..